

Effectiveness of
Preservice Teacher Training Programme
At Elementary Level in
Rajasthan

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FOREWORD

I have great pleasure in presenting the report on the research project entitled : " Effectiveness of Preservice Teachers Training Programme at the Elementary Level in Rajasthan ".

This project was sponsored by the NCERT under its scheme of Grant-in-Aid to Research Projects covered under the ERIC, NCERT, New Delhi.

Initially, the former State Institute of Education, Rajasthan, Udaipur took up this investigation in hand. Later on, the Government of Rajasthan took a decision to form the State Institute of Educational Research and Training and as a result, the State Institute of Education became its constituent unit. We were stuck up in the process of reorganisation and hence all this delay in seeing this project report through.

It is true that the researches are conducted everywhere in the field of education, but there are only few, which actually provide direction and really help in policy-making at the higher levels. I consider this piece of research unique.

I would like to place on record my deep appreciation for the NCERT, New Delhi for providing financial help.

ii.

I am indebted to my associate and colleague Dr. V.S. Sharma, Research Officer, SIERT, Udaipur for doing good work in completing this research and for writing the project report.

I would also like to thank all others connected with the job who helped Dr. Sharma one way or the other, in completing the task of such a magnitude.

We are indeed late in bringing out the report, but I am sure, the quality of this investigation would amply compensate for the delay.

Finally, I would like to say that this investigation would act as a morale-booster to the teacher educators and a source of inspiration to the research workers in the field of elementary education in Rajasthan as well as elsewhere in the country.

Date: 27-12-80

B.L. Vyas
Director

A C K N O W L E D G E M E N T S

It is now an established fact that the preservice teachers training programme in Rajasthan, is not a mere formality, but has a definite bearing on the field. A fairly large and representative chunk of trained mass has convincingly maintained its edge over the untrained mass, any claim of experience notwithstanding.

In completing this piece of research, I shall fail in my duty, if I do not join my Project Director, Shri B.L. Vyas, in recording the heartiest gratitude to the NCERT, New Delhi in particular and the fellow teachers both trained and untrained, of the State of Rajasthan in general, for their help in completing this task.

I must also mention Shri Jagdish Chandra Vyas and Shri Ramesh Chandra Dashora, both Research Assistants, who helped me a lot in tabulating the information and in interpreting the data collected. Particularly, Shri Jagdish Chandra Vyas needs special mention because of his deep insight into research and sincerity and hard labour he put into it.

Last but not the least, thanks are also due to the authorities of the Computer Centre, Physical Research Laboratory, Navrangpura Ahmedabad for their help in

(iv)

computerising the entire information.

The present investigation, I am sure, will provide a sound basis for improving upon the existing Elementary Teacher Training Programme in the State of Rajasthan, and a fundamental basis to those researchers who are working in this field.

Dr. V.S. SHARMA
CHIEF INVESTIGATOR.

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CHAPTER I

BACKGROUND OF THE PROBLEM

' A Teacher affects eternity; he can never tell where his influence stops "

Henry Adams.

The role of a teacher in building up the anonymous mass of pupils has all along been recognised throughout the ages. Whatever the philosophy, whatever the system, and whatever the structure of education, the significance of the role of a teacher in igniting in the pupils the challenge for learning, cannot be denied.

With the changing times, the position, status and the role of a teacher has also undergone a change from the highest stature (Guru Brahma, Guru Vishnu, Guru Deva Maheshwara) in ancient times to the lowest stature (Guru Gherao, Guru Beating) in the modern times.

TEACHER EDUCATION IN THE STATE OF RAJASTHAN

After independence, the teacher education programmes in Rajasthan has shifted from a point of no professional training of teachers to a rigorous training. Even now, there are untrained teachers with a standing of 10 to 20 years or more, working in the department. Such teachers are more in number in the

third grade (secondary or higher secondary pass) as compared to the second or first grades. Increasing interest has, now been shown in the professional training of teachers, since 1960, to be precise.

Upto 1948, the professional training like the JTC or VTC were more popular among the third grade teachers and B.T. among the second grade teachers. The element of professional training, however, never occupied a prominent place in the field of education. This profession was taken very lightly as if any Tom Dick or Harry could go to a class room and teach pupils. On the other hand, if some one was trained, he was given a sort of superficial respect by the departmental people. Sometimes, it was perhaps pleaded that the incumbent had wasted money and time in getting himself trained, because the professional training was never esteemed and was never linked with better emoluments of the teacher.

Thus, upto the end of 1950-51, there were three categories of teachers working in the department. The categories were: first, untrained teachers working in either second or third grades; the number of third grade was much larger in comparison to the second grade teachers; secondly, the JTC or VTC trained teachers; and thirdly, the teachers with B.T.degree. The number of

trained teachers was nominal. If the figures of trained and untrained teachers are compared, the number of untrained teachers comes to double the trained teachers. This fact is evident from the following table¹:

TABLE No.I

TRAINED AND UNTRAINED TEACHERS IN SCHOOLS IN THE SESSION

1950 - 51

Sl. Schools No.	Trained			Untrained			Total
	Male	Fe- male	Total	Male	Fe- male		
1. Primary Schools	2221	415	2636	5507	590	6077	
2. Upper Primary Schools	1961	256	2217	3609	660	4269	
3. Secondary Schools	1113	121	1234	2020	113	2133	
Total:	5295	792	6087	11136	1363	12499	

The following inferences can be drawn in relation to the trained and untrained teachers working in the department in 1950-51.

1. The number of untrained teachers is more than double the number of trained teachers.

1. Basic Educational Statistics 1962, Pp. 5-9

2. The number of trained or untrained female teachers is much smaller in comparison to the number of trained or untrained male teachers.

With the emergence of a new category of teachers, namely, the senior Teachers for Higher Secondary Schools in 1955, the academic as well as professional trainings in the State of Rajasthan gained momentum day by day and the workers in the Department of Education became increasingly interested in higher qualifications and higher emoluments attached to professional trainings. The training programmes, such as, the Montessori training for pre-primary schools, the STC training for primary and upper primary schools and the B.Ed. or M.Ed. training for the secondary and higher secondary schools became more and more popular among the teachers serving in different parts of the State. The Department of Education Rajasthan, also became increasingly conscious of the training programmes and thereby tried to make the training as a necessary condition for getting a toe-hold in the department as well as for getting promotions and regular annual increments in their respective pay-scales.

Even after tremendous expansion and consolidation of training programmes in the field of elementary and secondary education, there are three different categories of teachers working in the field of education. The categories are :

- 1. Untrained teachers having experience of more than 10 years. The Department of Education, Rajasthan, has, however, decided to regard such teachers as trained teachers by virtue of their long experience of teaching in schools. Such teachers have been accepted as being quasi-trained and have been permitted to enjoy all the benefits of a permanent trained teacher.
- 2. Trained teachers having certificates of the extinct VTC or JTC training. Comparatively, new entrants to the department in the third grade are having STC Certificates to their credit. The STC trained teachers are thus up-coming teachers and they are to serve the department for a long time to come. The STC training in Rajasthan is imparted by the teachers training institutions popularly known as 'Shikshak Prashikshan Vidyalayas'. Most of these institutions are run by the State Government and a few ones are by the private agencies.
- 3. Trained teachers having B.T. or B.Ed. degrees to their credit. These teachers are generally posted in Upper Primary or Secondary or Higher Secondary Schools of Rajasthan. The B.Ed. training is imparted by the Government and the Private Teachers Training Colleges.

The Two-Year STC Syllabus:

Upto the end of 1968, the STC training imparted to the teachers of primary and upper primary schools was of one year's duration. From 1969, the State

Government took a decision to increase its duration by one more year. The basic objective of increasing its duration was to have a parity with the STC training programmes organised by different States of the country.

In the year 1973, it was again envisaged that the State would have to face a dearth of STC trained teachers in view of the vast expansion of elementary schools to meeting out the demands of universalisation of primary education. Accordingly, it was decided by the State Government to maintain status quo ante, about its duration but to have one year's rigorous training in SPVs (Shikshak Prashikshan Vidyalaya) and one year's training through correspondence course under the guidance of the Correspondence Course Department of the then State Institute of Education, Udaipur and now the SICRT, Udaipur. Since then, the new syllabus for the S.T.C. training has been in vogue in the State of Rajasthan.

TEACHER EDUCATION PROGRAMME AND TEACHER BEHAVIOUR

The teacher education programme mainly aims at preparation of prospective teachers by exposing them to a variety of experiences. It aims at teaching them some pedagogical concepts and principles, developing in them certain desirable attitudes and providing them enough opportunities to develop proficiency in teaching skills. The pedagogical concepts and principles of

teaching are taught with this hope that these will affect their classroom behaviour pattern and these concepts will be translated into actual teaching behaviour pattern.

While implementing teacher education programmes, it is attempted that the prospective teachers teach under the supervision of teachers and teacher educators who are presumed to be equipped with better teaching skills than the raw young teacher trainees. The prospective teachers plan their lessons, prepare teaching aids, give lessons, handle large and small classes, organise various activities, get guidance and supervision from the supervisors and try to improve their teaching skills.

All these considerations given to a well organised and comprehensive teacher education programme, give rise to a leading question, Is the training provided to prospective teachers really effective ? This question is equally applicable to the STC or the B.Ed. training. The effectiveness of both the training programmes could be worked out, but, however, it would be desirable for any piece of research to take up either of these at a time.

Before taking any concrete steps to finding out the effectiveness of any training programme, it would be imperative to take stock of the researches conducted in this direction either in India or abroad.

STUDIES ON TEACHER EFFECTIVENESS

Research on teacher effectiveness is over half a century old². This implies that it is one of the most interesting area in the field of educational research to invite the attention of researchers. Nevertheless, the non-availability of all research reports compels the conclusion that this area of investigation is as barren as it was in the past. However, it is a fact that the Westerners have gone very far in this direction in comparison to the Easterners.

I. WORK DONE IN THE WEST

A number of authorities on teacher education have tried to define, classify and categorise certain aspects of teacher effectiveness and teacher characteristics. Some of the view points expressed in this context are as follows:

R.L.Thorndike³ (1949) suggested that effectiveness can be classified as ultimate, intermediate and immediate while Kelly and Fiske⁴ are of the opinion that effectiveness can be worked out with the help of three categories of criteria according to their goal proximity. These

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2. N.K.Jangira, An Experiment in Teacher Education and Teacher Effectiveness, P.14.
 3. R.L.Thorndike, Personnel Selection, 1949, P.358
 4. Satya Pal Ruhela (Ed.), Sociology of the Teaching Profession in India, P.237

are (i) product criteria (ii) process criteria (iii) presage criteria. All these criteria could be employed to measure the effectiveness of a teacher as a whole and not to evaluate a specific or particular aspect of his behaviour.

Similarly, David G.Rayans (1960) has suggested the probable correlates of teacher effectiveness. According to him⁵ some of the positive correlates are: measured intellectual abilities, achievement in college course, general, cultural and special subject matter knowledge, professional attitudes favourable to students, generosity in appraisal of the behaviour and motives of other persons, strong interest in reading and literary matters, interest in music and painting, participation in social and community affairs, early experiences in caring for children and teaching, history of teaching in family, size of school and size of community in which teaching, cultural level of community, and participation in vocational activities.

The studies which are available in this context are of two types:

(a) Process-product studies: In this type of studies, the investigators have tried to investigate the teacher

5. David G.Rayans, Characteristics of Teachers, P.226

behaviour and pupils' outcome through a variety of experiments. The investigators have included the many achievements of the pupils, other than academic.

- (b) Process-process Studies: In this type of studies, the researchers have tried to find out the relationship of teaching process with the teacher characteristics and formative experiences.

Some of the significant studies in relation to both the types of researches are being presented below:

H.H.Anderson⁶ and his associates (1939, 1945, 1946) carried out studies relating to teacher contacts and pupil behaviour. The investigators designed two separate observation tools - one to assess teacher behaviour along "dominative-integrative" climate dimension and the other to assess pupil behaviour. The findings as summarised by Flanders are:

- (a) The dominitive and integrative contacts of the teacher set a pattern of behaviour that spreads throughout the classroom; the behaviour of the teacher, more than that of any other individual, sets the climate of the class. The pattern a teacher develops in one year is likely to persist in the classroom the following year with completely different pupils.

6. H.H.Anderson and H.M.Brewer, Psychological Monographs, P.8.

- (b) When a teacher has a high preparation of integrative contacts, pupils show more spontaneity and initiative, voluntary social contribution and acts of problem solving.
- (c) When a teacher has high preparation of dominative contacts, the pupils are more easily distracted from school work and show more compliance to, as well as rejection of, teacher domination.
(Process-product Research)

In a laboratory experiment by Flanders⁷ (1951), contrasting teacher behaviours were exposed to one pupil at a time, a sustained dominative pattern was consistently disliked by the pupils, reduced their ability to recall, later on, the material studied and produced disruptive anxiety as detected by galvanic skin response to changes in heartbeats. Integrative contacts induced reverse responses.

(Process-product Research)

White and Lippet⁸ (1960) tried to study effects of authoritarian, democratic and Laissez - faire leadership on eleven year old children in club activities. The

7. Ned A.Flanders, Journal of Educational Research,
P. 109.

8. N.K.Jangira, An Experiment in Teacher Education and Teacher Effectiveness P.19.

researchers found that authoritarian leadership developed a pattern of aggressive domination towards one another and their relationship towards their leaders became a sort of submission to them. In the democratic set up of the club, the interaction was found to be more spontaneous, more fact minded and friendly.

(Process-product Research)

In another historic investigation by David G.Ryans⁹ (1960), the researcher tried to find out the 'teacher characteristics' and respective patterns of class-room behaviour and personal qualities of teachers. It was reported that neither the amount of teaching experience nor age appeared to be very highly associated with teacher attitudes, although there was a slight tendency for the attitudes of secondary teachers of greater experience to be slightly more favourable towards administrators and somewhat less favourable towards pupils than other experience groups.

(Presage-process Research)

Flanders¹⁰ (1963) tried to find out the effects of teaching experienced teachers using interaction analysis. It was found that teaching based on interaction analysis is more effective in bringing change in most of the teachers than the conventional programmes.

(Presage-product Research)

9. David G.Ryans, Characteristics of Teachers P.385.

10.N.K.Jangira, Op.Cit.P.23.

Miller¹¹ (1966) conducted an experiment with four teachers, each teaching four lessons in a 'responsive manner' and a 'directive manner'. The researcher found that students in 'responsive' teaching viewed the lessons more favourably and exhibited significantly higher levels of thinking than the students in directive teaching.
 (Process-product Research).

In another experiment by Amidon and Powell¹² (1966), four groups of 15 student teachers each were exposed to different variables. The variables were:

- The first group had interaction analysis and seminar, and was supervised by a cooperating teacher trained in interaction analysis.
- The second group had interaction analysis and seminar, and was supervised by a cooperating teacher not trained in interaction analysis.
- The third group had learning theory and seminar, but was supervised by a cooperating teacher trained in interaction analysis.
- The fourth group had learning theory and supervised by a cooperating teacher trained in learning theory.

It was found that the student teachers who knew interaction analysis talked less and were more indirect

11. N.K.Jangira, Op.Cit., P.22.

12. ibid. P.23.

in their overall interaction, in their use of motivating and controlling patterns of behaviour, than those teachers who were not trained in interaction analysis. It was also reported that the student teachers whose cooperating teachers learnt interaction analysis used less extended direct influence than their counterparts.

(Presage-process Research)

In another research sponsored by the Florida Educational Research and Development Council, Joseph C. Bondi Jr.¹³ (1970) tried to study 'Feedback from Interaction Analysis: Some Implications for the Improvement of Teaching'. The researcher observed that the student teachers who received interaction analysis feedback differed significantly in their use of the following teacher verbal behaviour patterns from those who did not receive such feedback (i) they used more praise (ii) they accepted and clarified the ideas of the student more, (iii) they used more indirect teacher talk as opposed to direct teacher talk (iv) they used less corrective feedback (v) they criticized students less, (vi) they asked more questions (vii) they used lesser number of lectures and (viii) they gave fewer directions.

(Process product Research)

13. Joseph C. Bondi (Jr.), The Journal of Teacher Education P.194.

Richard J. Reynolds¹⁴ (1970) tried to study 'class-room verbal Interaction Patterns as a Function of Instructor Cognitive Complexity'. The results of this investigation lend evidence to the hypothesis that cognitive complexity is a meaningful variable in explaining behavioural variances occurring in the college classroom. The results further gave indication that the variable may be useful in describing or explaining verbal interaction patterns (Presage-process Research).

In another investigation by Donald J. Veldman¹⁵ (1970) the researcher tried to study the pupils' evaluation of student teachers and their supervisors. It was found that there is no evidence that supervisors influence the behaviour of their student-teachers appreciably.

(Presage-process Research)

And above all, Flanders¹⁶ (1965, 1969, 1970) conducted a number of studies on the verbal interaction of teachers in class-room situations. He tried to find out the relationship between teacher influence, and pupil achievement and pupil attitudes. It was found that the teacher influence had positive relationship with adjusted

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14. Richard J. Reynolds, The Journal of Teacher Education, P. 59.
 15. Donald J. Veldman, The Journal of Teacher Education, P. 167.
 16. N.K.Jangira, An Experiment in Teacher Education and Teacher Effectiveness, P.20

pupil achievement and pupil attitude. In Flanders' own words, the findings are:

In six out of seven projects, it appears that when class-room interaction patterns indicate that pupils have opportunity to express their ideas, and when these ideas are incorporated into learning activities, the pupils learn more and develop more positive pupil attitudes towards the teacher and the learning activities.

(Process-product Research)

II. WORK DONE IN INDIA

In relation to India, it could be said that the educational research in this respect is still in its stage of infancy, and the class-room research is yet in its embryonic stage. Some sporadic attempts have been made in the field of teacher effectiveness and teacher characteristics.

P.G. Aaron¹⁷ (1966) tried to study probable correlates of teacher effectiveness viz. individual initiative, self-concept and motivation. The researcher found that a positive correlation exists between these properties and teacher effectiveness.

(Process-product Research)

Mehta¹⁸ et al., (1969) tried to use training in class-room interaction analysis in their 'laboratory in

17. Satya Pal Ruhela (Ed.), Op.cit. P.238

18. N.K.Jangira, Op. Cit. P.27.

Achievement Motivation' programme. The researchers reported higher achievement in follow-up studies of the experimental groups. (Process Product Research)

Pareek and Rao¹⁹ (1970) conducted a study using FIACS (Flanders Interaction Analysis Category System) on 50 fifth grade teachers of 50 primary and upper primary schools of Delhi city. Each teacher was observed for 3 half-hour periods and in all, 84,087 observations were recorded. The researchers found that about 55 per cent of the time was spent in teacher talk by Delhi teachers. In 11 per cent of the observed periods, the teachers used more indirect influence than the direct influence. No sex differences were reported in the study.

(Normative Research)

Buch and Santhanam²⁰ (1970) observed 11 teachers teaching English language to classes VI-X. After observing each teacher for two times, the researchers found that teacher talk was 69 per cent, student talk 21 per cent and I/D ratio 0.2. In another study by Buch and Durashi (1970) involving 17 male Social Studies teachers of secondary schools in Baroda, the teacher talk was found to be 83 per cent, pupil talk 10 per cent and silence or confusion 7 per cent. The I/D

19. Buch and Santhanam, Communication In Classroom
pp. 119-147

20. ibid. p.p. 21-50

ratio arrived at 0.17.

(Process Product Research)

Santhanam, Quraishi and Lulla²¹ (1970) conducted an investigation covering 19 women and 17 men Social Studies teachers. It was found that women teachers talk about 75 per cent whereas men teachers talk about 82 per cent. Pupils in women teachers' class talk about 13 per cent while in men teacher's class talk about 0.5 per cent.

(Normative Research)

Sharma²² (1971) tried to study the relationship of predictors of teacher-effectiveness at elementary level and follow-up after one year of training. The teacher effectiveness was evaluated on the basis of (i) U.P. Departmental examination marks in theory and practice during the training course (as presage criterion), (ii) the personality rating scores of trainees (as presage criterion), and (iii) supervisors ratings of class-room teaching during training period (as process criterion). It was found that teacher talk seemed to have a negative correlation with scores on the Teaching Aptitude Test and academic grades whereas the teacher's indirect influence seemed to have a high positive association with scores on the Teaching Aptitude Test.

(Presage-Process Research)

21. ibid pp. 69-118

22. M.B. Buch (Ed.) A Survey of Research in Education
P. 437

Pareek and Rao²³ (1971) tried to study association between verbal classroom behaviour of teachers and pupil adjustment. It was found that the indirect/direct (I/D) influence ratios of two types give two different types of associations.

(Process-product Research)

Mitra²⁴ (1971), using FIACS, observed 78 teachers teaching different subjects in 17 schools of Jabalpur and administered an attitude questionnaire to the pupils under the charge of these teachers. The investigator found that there was a positive tendency of the pupils to like teachers who use indirect influence, but it was not significant at either of the levels of significance.

(Process-product Research)

In another study, the same team²⁵ (1971) of researchers conducted a 10 days' training programme on interaction analysis for the benefit of V grade teachers of Delhi. Two groups - experimental and control, were observed before and after training. The post-training observations were recorded even after a period of 6 months. It was reported that the experimental group of teachers, modified their class-room behaviour from direct to indirect and maintained it consistently.

(Presage-process Research)

23. N.K. Jangira, up.Cit. p.27

24. ibid, p.27

25. ibid., p. 28

Nath²⁶ (1971) conducted an experiment to study the effect of feedback based on interaction analysis using FIACS. Pre-training and post-training observations of 24 women B.Ed. trainees were recorded. It was found that the experimental group, after training in interaction analysis, talked less, had i/i+d ratios and pupil initiation, higher than the control group.

Jangira²⁷ (1972) studied the effect of classroom Behaviour training on classroom interaction patterns of a group of student teachers and compared the classroom interaction patterns of another group of student teachers following conventional programme of student teaching. It was found that the student-teachers with 'Classroom Behaviour Training' sustained significant differences on classroom interaction patterns as compared to the student teachers with conventional student-teaching even after twenty-six weeks of their training.

(Process-product Research)

Emerging Trend: The studies reported above give a panoramic view of the state of affairs prevalent in the field of teacher characteristics and teacher effectiveness. Efforts have also been made to identify effective teaching behaviour patterns and

26. ibid P.28

27. ibid. P.81

modify classroom practices accordingly. In India, particularly, sporadic efforts have been made to find out the teacher effectiveness, but the net result in relation to the quantum of work seems to be far from satisfactory. The area of finding out the effectiveness of training programme - preservice and inservice - is quite obvious from the absence of such efforts ever having been made.

NEED FOR THE PRESENT INVESTIGATION

It is established, by and large, objective of all teacher education programmes is to restore the image, status both formal and informal, preparedness and competence of the teacher, which he used to enjoy by virtue of his superiority in the good old days.

With this background, the Central Government at the national level and the State Government at the State level have initiated a number of intensive programmes and have taken a number of steps for raising the social status of the teacher. For example, to provide job opportunities, intensive preservice training programmes at the STC and B.Ed. levels have been launched for prospective teachers, and either of the training programmes have been made compulsory for a person to get a toe-hold in the Department of Education;

for promoting competence and preparedness of the teacher, a variety of inservice teacher training programmes have been started through the agencies like, the State Institute of Education, the State Institute of Science Education, the State Evaluation Unit, the Educational and Vocational Guidance Bureau and many others; and for enhancing formal and informal status, many steps like, the revision of pay scales, the introduction of State and National awards, the observance of Teachers' day etc., have been undertaken.

It is generally supposed that all these aforesaid agencies have been discharging their duties faithfully, very faithfully. Even then, it is also felt and doubts are raised from time to time that the outcome of all the programmes organised by different agencies is not as satisfactory as it should have been. 'What is the basic flaw?' is a separate question to be answered, yet one of the most relevant questions is 'Whether the training programmes - preservice or inservice, organised by different agencies, are really effective, fruitful, and rewarding?' This is quite a comprehensive question and there seems to be no satisfactory answer to this. Neither does it seem to have been investigated thoroughly so far by any of the agencies in the country, nor there seems to be any satisfactory and all satisfying answer to it.

Moreover, it has also been felt that the teacher trainees, attending either preservice or inservice, training programmes, have developed a different type of psychology of their own towards the programmes. Many of the trainees in either of the programmes are stated to have expressed their view that they had joined it perfunctorily and they have no heart in it, a formality to kill time or to obey the orders as well as to fulfil the service conditions of the department. The situation has a touch of pathetic irony in it. It is a sad paradox that while the Department of Education has made a provision for updating the teachers, the teachers themselves, on the other hand, seem to view the programmes for whiling away if not wasting their own time. With such defeatists and cynical views in the air, all teacher training programmes can be foredoomed to failure. The time is now to pause, think and reconsider !

Thus, on the basis of the foregoing discussion, any effort for judging the effectiveness of Preservice or Inservice programmes will definitely be a positive contribution to the educational theory and practice. However, the field of preservice and inservice is quite comprehensive and a series of investigations could be taken up. Therefore, the State Institute

of Education, Udaipur has decided to take up an humble step towards finding out of the Effectiveness of Preservice teachers training programmes at the elementary level in Rajasthan. The plan of attack for this piece of research is, however, being presented in the next chapter.

C H A P T E R II
PLAN OF INVESTIGATION

Before I built a wall, I'd ask to know,
What I was walling in or walling out.

Robert Frost.

It has been a point of discussion all along the past years that the professional training in education is a mere formality, a device to waste time, money and manpower, and above everything else, an un-necessary condition of the Department of Education, Rajasthan for getting a toe-hold in it. This has not only been the feeling of teachers undergoing preservice training, but also of the parents who support the trainees in pecuniary matters and of the teachers who actually work in the field. All concerned seem to hold the view that there is no relationship between theory and practice aspect of the training programme and, therefore, the training has no bearing on the teacher trainees, when they actually go to the schools.

This point can be a good debatable issue in the academics, but cannot be a point of much importance in the field of research unless it is proved or disproved scientifically. The survey of related literature in the previous chapter has also substantiated the fact that no research has so far been

taken up on this aspect by any of the institutions or organisations or research workers in the country. Accordingly, any attempt in this direction should definitely provide guidance to all those concerned and should help in paving a path for better training opportunities to the prospective teachers of the State.

In view of the above mentioned considerations, the State Institute of Education, Rajasthan, Udaipur has undertaken to submit research proposals for financial assistance to the NCERT, New Delhi, on the following problem:

"AN INVESTIGATION INTO THE EFFECTIVENESS OF PRE-SERVICE TEACHER TRAINING PROGRAMME AT THE ELEMENTARY LEVEL IN RAJASTHAN"

OBJECTIVES OF INVESTIGATION

Main Objective

The main objective of this investigation was to find out the relative effectiveness of the two-year teacher training programme at the elementary level in Rajasthan.

Subsidiary and Concomittant Objectives

In order to achieve the main objective, some subsidiary and concomittant objectives were also set for achievement either as a by-product of the main

investigation or as a necessary conditions for realising the main objective. The subsidiary and concomitant objectives are as mentioned below:

1. To identify and analyse some of the prospective class-room behaviour-patterns, view points, intellectual and emotional qualities of teachers on the basis of the opinion of teacher educators.
2. To study the class-room behaviour patterns of the trained and untrained male and female teachers working in the field of elementary education.
3. To know about the supervisors' opinion about the class-room behaviour-patterns of trained and untrained teachers.
4. To evolve class-room profiles of trained and untrained teachers in Rajasthan using the FIACS technique of class-room interaction.
5. To compare the teaching aptitude of trained and untrained teachers of Rajasthan.
6. To compare the preparedness of male and female trained and untrained teachers in the subject content, being taught by them in the elementary classes of Rajasthan.
7. To compare the class-room interaction patterns of the trained and untrained teachers of the elementary schools of Rajasthan.,

HYPOTHESES

In this piece of investigation, it was thought worthwhile to test the following null hypotheses:

There is no significant difference between -

- a) the class-room interaction of trained and untrained teachers,
- b) the teaching aptitude of trained and untrained male and female teachers,
- c) the preparedness and command over the subject content of the trained and untrained male and female teachers,
- d) the performance of teaching classes by the trained as well as untrained male and female teachers, and
- e) the opinion of supervisors about the general performance of the trained and untrained teachers of Rajasthan.

DELIMITATIONS

The following limitations were imposed on the variables within the vast universe of exploration and the number of units of the samples covered under the investigation:

1. For arriving at a consensus regarding weightage to be given to each aspect of training programme, opinion of 50 instructors of

'Shikshak Prashikshan Vidyalays' of the State was regarded as sufficient for the purpose of further exploration.

2. The investigation was confined to the teachers of 18 out of 26 educational as well as revenue districts of Rajasthan.
3. The population of the trained and untrained teachers was confined to 363 and 187 respectively for the present investigation.
4. Only those trained teachers were included under the sample who got their STC certificates between July 1973 to July 1976.
5. Only those untrained teachers were included in the sample who had experience ranging from 10 to 18 years.

MODUS OPERANDI OF INVESTIGATION

The method of investigation and the approach to find out the effectiveness of preservice teachers training programme consisted of the 'Normative Survey Method' and the use of conventional as well as the latest technique of class-room interaction of teachers. The details of these are given below:

Normative Survey

The Normative Survey method was made the overall

rationale of this investigation. This method was employed because of two reasons : first, fresh and newly employed untrained teachers are not available nor are they recruited in the department; secondly, the situations of controlled and experimental groups could not be manipulated because of the strict conditions of the department in relation to the recruitment of teachers. Nor was it possible to adopt a 'before and after' approach to this investigation. Therefore, it was the only method which could have been employed for this piece of investigation.

Flanders Interaction Analysis Category System (FIACS).

For recording class-room behaviour of trained and untrained teachers, it was thought worthwhile to employ the FIACS technique of recording verbal behaviour of teachers alongwith the conventional method of recording observations. The basic objective of employing new technique was to become more objective in the assessment of the verbal interaction of teachers - trained and untrained, in Rajasthan.

PLAN OF INVESTIGATION

The important steps as pursued in this piece of research are as follows:

Step I. Criterion Development of Effectiveness

1. Survey of Related Literature

As a first step, it was decided to make an exploratory survey of the related literature with a view to gain familiarity with the problem and to get new insight into it.

2. Critical Study of the Two-Year Syllabus

A critical study of the two-year STC syllabus was carried out with a view to become familiar with the syllabus and to sort out such relevant points as could be made use of, for ascertaining the weightage to be given to the requirements of a prospective teacher in school situations.

3. Criterion for finding out Effectiveness

In order to find out the effectiveness, it was decided to compare the performance of trained and untrained male and female teachers on the following fronts:

- a) preparedness of teachers,
- b) presentation of subject content by the teachers,
- c) teaching aptitude of teachers,
- d) supervisor's perception of teachers, and
- e) the verbal class-room interaction of teachers.

Step II. Selection of the sample.

1. Sample for Ascertaining Weightage

The sample for ascertaining weightage for the preparation of a questionnaire-cum-achievement test consisted of 50 teacher educators working in 25 teacher training institutions of the State. It was thought that this number of the teacher educators of various disciplines would be fairly good for getting a consensus on the issue of weightage to be given to different aspects of the training programme in the questionnaire.

2. Sample for finding out Effectiveness.

The sample for finding out effectiveness of training programme consisted of 550 teachers - 363 trained and 187 untrained, working in various primary, upper primary, secondary and higher secondary schools of Rajasthan. The further split up of the sample comprised 280 male and 270 female teachers. The Range-wise details of the sample have been given in the following table:

**TABLE NO. I
RANGEWISE SAMPLE FOR THE INVESTIGATION**

Sl. No.	Range of administra- tion	Trained Teachers		Untrained Teachers	
		Male	Female	Male	Female
1. Jaipur-Ajmer		52	54	24	40
2. Jodhpur-Bikaner		68	56	35	23
3. Udaipur-Kota		72	61	29	36
Total		192	171	88	99

Step III. Construction of Tools

In all, four tools were thought to be evolved for the purpose of investigation. Out of these, one BLANK for soliciting opinion of teacher educators about the prospective role of teacher trainees in the field and, three tools for getting information from the teachers working in different schools of Rajasthan. A brief description about the construction of tools is as reported below:

1. Blank for Ascertaining Weightage

After carrying out a critical study of the two year STC syllabus, it was attempted to prepare a BLANK for the teacher educators with a view to soliciting their opinion about the role and performance of a teacher particularly in relation to what the teacher has been taught in the SPV and to the extent he has been practising his knowledge in the field. The end objective of this effort was to get an overall rationale for the items of a questionnaire particularly on the application side of the preservice teacher training programme.

2. Questionnaire for Teachers

Having ascertained the weightage to be given to various aspects of teacher training programme with special reference to its application aspect, a

questionnaire was evolved for the teachers performing their roles in class-room situations. The entire questionnaire having 50 items was divided into five major parts, namely, knowledge of subject content in Mathematics, Hindi, Social Studies, General Science and others; application aspect of the subjects like, psychology, methods of teaching, etc., community life; 'Katipaya Vishishta Anubhav' (Some significant experiences); and other aspects of the training programme.

3. Observation Schedule

One observation schedule was prepared for observing the classroom teaching of trained and untrained male and female teachers. The schedule was structured to have eight sections, namely, Introduction of the lesson; Development of the lesson; Art of Questioning; Command over the Content; Use of Teaching Aids; Personality of the teacher and Environment of the class; Evaluation and Home work; and Teacher-pupil interaction in the class-room. In all, 69 items were structured for the observation schedule. This tool was based on the conventional method of observing lessons in schools.

4. Interview Schedule

In order to solicit opinion of the supervisors about the teachers working in schools, an

Interview Schedule was prepared in advance. The basic objective of this schedule was to get definite opinion of the supervisors as to what they exactly felt about the trained as well as the untrained teachers teaching in their schools. This schedule was mainly divided into three major sections, namely, the Teaching-learning process; the Personality traits; and other Important Activities of a school.

Step IV. Orientation Programme for Data collection Staff

A ten-day programme from 10th to 17th March, 1976 was organised in the State Institute of Education, Udaipur, to provide orientation to the team of data collection staff. This programme included the mode of data collection from the field, administration of T.A.T. (Teachers Aptitude Test) and mode of collecting data using FIACS (Flanders Interaction Analysis Category System) technique of recording class-room interaction of teachers.

Step V. Collection of Data

1. Instructions to Cooperating Schools

Having made all the preliminary preparations, the headmasters of such institutions where the teachers selected for the purpose of investigation were working, were requested on behalf of the State Institute of Education, Udaipur to extend fullest cooperation to

the members of the data collection team. Simultaneously, another measure reinforcing it was also taken up by requesting the District Education Officers (Male & Female sections) of the districts concerned, to issue orders to the institutions for extending desirable cooperation to the SIE Udaipur for this project.

2. Field Work

After getting the instructions issued to the cooperating institutions, the team of data collection staff set out for information gathering on the 25th March 1976. Five pieces of information were required to be collected from each unit of the sample. They were: (a) Observation of two lessons of each teacher on the traditional lines as per observation schedule; (b) Recording of observations on two lessons of each teacher using FIACS, in two spells each of 20 minutes duration; (c) Administration of Teaching Aptitude Test (T.A.T. by Jaiprakash); (d) Getting the questionnaire filled in by the teacher concerned; (e) and recording of the information from the Headmaster or Education Extension Officer (E.E.O.) or Sub-Deputy Inspector (SDI) or any other Incharge Officer concerned about the job performance of the teacher. All these operations required from 8 to 10 hours for collecting information from each teacher. The process of data

collection was completed on 15th May, 1976.

Step VI. Analysis and Interpretation of Data.

After collecting information from all the 550 units of the sample, the entire information was given rigorous statistical treatment for its analysis and interpretation. In this process, partial analysis was done manually, and the rest was got done from the Computer Centre, Physical Research Laboratory, Ahmedabad. A brief note on each of the facets of analysis and interpretation of data is as presented below:

1. Teaching Aptitude and Preparedness of Teachers

In order to find out the teaching aptitude of the units of sample, a standardised teaching aptitude test, by Jai Prakash, was administered, scored and norms were compared with the scores of trained and untrained teachers of the State.

Similarly, to assess about the mastery over the content, the scores of trained teachers on the questionnaire-cum-achievement test were compared with the scores of untrained teachers. In both the processes of comparisons, the technique of working out critical ratios was employed.

2. Supervisors' Perception

For finding out the perception of the supervisors, two tools namely, the Interview Schedule

and the Observation Schedule were used. The former was used exclusively by the supervisor's concerned, whereas, the latter was taken-up on the spot by one of the members of the data collection staff. The scores of trained and untrained teachers on both the tools were compared by the method of comparing means.

3. Classroom Behaviour of Teachers

As pointed out earlier, the classroom behaviour of teachers was found out by using the comparatively new technique of FIACS. The ratios like, T.T., PT, SC, TRR, TQR, TRR89, TQR89, PIR, PSSR, CCR and SSR were computed for trained as well as untrained male and female teachers. The ratios thus worked out were compared to find out who had performed better.

4. Comparison of Trained and Untrained Teachers

In order to compare the performance of trained and untrained teachers belonging to different strata, statistical technique of comparing means and percentages was employed.

5. Variance of the Sample

This technique was applied to test the hypothesis whether -

$$\sigma_1^2 = \sigma_2^2 = \sigma_3^2 = \dots \sigma_n^2 = \sigma^2$$

The basic objective of using this technique was to test the homogeneity or heterogeneity of each of the strata of the samples under reference.

CONCLUDING STATEMENT

This piece of research was undertaken to initiate thinking about the utility of the preservice teachers training programme and to promote a viable mode of finding effectiveness of a programme at the STC level. The main method used in this exploration was the 'Normative Survey Method'. The basic approach adopted in respect of finding effectiveness of the training programme was to have a linear comparison of the teacher characteristics and qualities of trained and untrained male and female teachers of Rajasthan. Having prepared the plan of investigation, it is now proposed to report the 'Teaching Aptitude and Preparedness of Teachers' in the next chapter, as it forms the fundamental basis of the present investigation.

C H A P T E R - III

PREPAREDNESS OF TEACHERS : AN APPRAISAL

'Preparatory teachers enter a teacher preparatory programme harboring certain instructional goals for pupils; that is, goals that have been reinforced by parents and previous teachers.'

R.L. Turner

For the success of any person in any vocation, three requirements are very essential. The person should be physically fit, mentally ready to serve and should have a command over the subject he proposes to handle. Normally, those who join the profession at a young age, they can be regarded as physically fit. But the other two requirements - mental preparedness and mastery over the subject, play a decisive and predominant role in the success or failure of the person in his future career. This is true for every profession whether of a teacher, or a doctor or an engineer.

In the words of J.P.Chaplin, preparedness, 'is the first stage in creative thinking in which the individual 'loads up', i.e., obtains all the information he can and makes tentative attempts to solve the problem.¹ Particularly in teaching profession the effort of preparedness is complicated when the

1. J.P. Chaplin, Dictionary of Psychology, P. 376

'explosion of knowledge in many of the disciplines, the increasing complexity of the general education required of all teachers, and the difficulties of becoming proficient in the theory and practice of instruction',² are taken into account.

In view of these considerations, any measures to find out the effectiveness of preparedness - intellectual or aptitudinal, of teachers should form the fundamental basis of the criterion towards judging the effectiveness of pre-service teacher training programme. Therefore, the main purpose of this chapter is to present the criterion developed for judging the preparedness of trained and untrained teachers selected under the sample for this investigation.

REQUIREMENTS FOR A TEACHER

Generally, every programme for preparing teachers starts with some basic conceptions of the kinds of competencies to be developed in teacher trainees particularly in relation to the preparedness of teachers. Ralph H. Thompson states the competencies as under³-

- A. The teacher must be competent in knowledge of
 - (1) subjects of instruction; (2) learners

2. Ralph H. Thompson, The Journal of Teacher Education, P. 267

3. ibid P. 267

and learning, (3) instructional strategies, (4) the school - purposes, functions, structures and problems.

B. The teacher must be competent as (1) an educated person, (2) a member of a profession.

All the competencies, when they harmonise in one individual, it is assumed that the individual is or has become an ideal teacher. All these competencies are acquired during the entire educational career of a teacher right from academic to professional training, therefore, it poses a difficult problem for a researcher as how to know the preparedness of a teacher through more objective means.

CRITERION DEVELOPMENT FOR THE ASSESSMENT OF PREPAREDNESS OF TEACHERS

As pointed out in the preceding section, the teacher must have acquired competencies as an educated person and he should be a member of a profession. In order to ascertain these competencies, it was decided to evolve a questionnaire-cum-test paper for ascertaining teacher's competencies in the subjects he teaches in primary schools and to administer a standard aptitude test for ascertaining the capacities of teachers to perform teaching tasks in future. The basic steps which were followed while evolving a

criterion for the assessment of preparedness of teachers are as given below:

- I. Construction of questionnaire-cum-test paper
- II. Adoption of Teaching Aptitude Test
- III. Administration and scoring of Tools
- IV. Comparison between the performance of Trained and Untrained Teachers

The details about each of the above mentioned steps are given in the following sections:

I. CONSTRUCTION OF QUESTIONNAIRE-CUM-TEST PAPER

The main purpose of this test paper was to prepare a questionnaire-type of tool which might give an idea about the mastery over the basic subjects likely to be taught by the teachers in primary schools and to know something about the application aspect of the traits included in the pre-service teacher training received by the prospective teachers at Shiksh Prashikshan Vidyalayas (STC Schools). Regarding application aspect of training in the actual field of operation, it was aimed at framing such situations which might reflect the application of training, and might help the investigators to discriminate the behaviour of trained or untrained teachers.

The procedure followed for the construction of questionnaire-cum-test paper has been presented below:

1. Study of the SPV Syllabus:

'The first step in the development', observes E.F. Lindquist, of a performance test is to make a very careful study of the specific skills and abilities involved in activities the test is intended to measure. Such a study might best culminate in a formal job analysis report.⁴ Therefore, in view of this consideration, an intensive study of the SPV Syllabus was carried out, the salient features of which are being mentioned hereinunder:

Duration: Originally, the Syllabus was planned for two years, but on account of the vast expansion of educational facilities in the Fifth Five Year Plan, for the universalisation of elementary education, it was decided by the Department of Education to have first year course of the STC through regular SPV institutions and the second year through the correspondence course run by the Department of Education, Rajasthan.

Objectives: Fifteen objectives have been enumerated in the two-year syllabus. These include, inter alia, the following major objectives -

- a) To diagnose and to rectify the subject content weaknesses of the prospective teachers.

- b) To make the prospective teachers conscious of developing desirable attitudes, understandings, interests and skills among the pupils through new techniques and methods of teaching.
- c) To help the prospective teachers develop insight into the individual needs of the pupils and the expectations of the society at large.
- d) To provide enough opportunities to the prospective teachers as to how to teach various types of lessons.
- e) To train the prospective teachers as to how to run curricular and co-curricular activities in school situations.

Structure: The entire syllabus has been divided into three major parts -

- a) Theoretical Aspects of Education - Subject content and Methods of Teaching.
- b) Practice Teaching.
- c) Practical work.

As a matter of policy, it has been decided that the organisational aspect of all the above mentioned major parts should be completed in two terms, the details of which are⁵:

5. Two Year Syllabus for Teacher Training Institutions, Rajasthan, PP. 3-5.

First Year (Through regular course)

a) Theoretical Aspect of Education:

First Paper : Hindi - content knowledge and methods
of teaching (Classes I to V).

Second Paper: Mathematics - content knowledge and
methods of teaching (Classes I to V)

Third Paper : Social Studies - content knowledge and
methods of teaching (classes I to V)

Fourth Paper: General Science - content knowledge and
methods of teaching (classes I to V)

Note: Although the three subjects - Principles of
Education, Educational Psychology and English
(Optional) will be taught in the first year,
their final examination will be held in the second
year. In the first year, all evaluation and
examination. will be local and internal.

b) Practice Teaching:

- i) Practice Lessons in Hindi, Mathematics, Social
Studies and General Science (Class I to V)
- ii) Practice Lessons in English (optional - classes
VI to VIII)
- iii) Criticism Lesson
- iv) Observation of Lessons
- v) First introduction to teaching and Block
Teaching.'

c) Practical Work

- i) Work Experience
- ii) Drawing
- iii) Community Living
- iv) Physical Education

Second Year (Through correspondence course)

a) Theoretical Aspects of Teaching

First Paper : Principles of Education, General Methods
of Teaching and School organisation.

Second Paper: Educational Psychology and School Health
Education.

Third Paper : Hindi - content knowledge and methods
of teaching (classes VI to VIII)

Fourth Paper: Mathematics - content knowledge and
methods of teaching (classes VI to VIII)

Fifth Paper : Any one of the following subjects:

- English - content knowledge & method
of teaching
(classes VI to VIII)
- Social Studies " "
- General Science " "
- Commerce " "
- Drawing " "
- Home Science " "

b) Practice Teaching

- i) Lessons in Hindi, Maths and optional subjects
- ii) Observation of Lessons
- iii) Criticism Lesson
- iv) Block Teaching
- v) Katipay Vishishta Anubhava - (Some significant experiences).

c) Practical Work

- i) Work Experience
- ii) Drawing
- iii) Community Living
- iv) Physical Education

2. Blank for Ascertaining Weightage

While conducting any programme of educational upliftment, the teacher concerned is expected to be clear about the objectives of running the programme. The achievement of these objectives ultimately leads to the fulfilment of educational objectives of education. 'By educational objectives', in the words of Dr. B.S. Bloom, 'we mean explicit formulations of the ways in which students are expected to be changed by the educative process. That is, the ways in which they will change in their thinking, their feelings and their actions'.⁶ Therefore, in order to know something about the ways, thinking and feeling, and

⁶. Benjamin S. Bloom, Taxonomy of Educational Objectives : Cognitive Domain, P. 26.

actions of the teachers in the field, it was decided to prepare a blank for teacher educators for soliciting their opinion as to how much weightage should be given to different aspects of training programme being implemented in the field, while judging the actual performance of a teacher working in the field.

The blank was divided into five major heads, namely, the application aspect of core subjects included in the training programme, the knowledge aspect of basic subject content such as, Hindi, Maths., General Science, Social Studies, the community life, the Katipei Vishishta Anubhava, and other aspects, having 2 to 7 minor heads. It was clearly mentioned in the forwarding note of the Blank that the opinion of the respondents was being solicited for a piece of research, and therefore, they should feel free and express clearly their opinion about each of the heads in terms of weightage they propose to assign to each of the functional aspects of the training programme. A copy of the Blank has been appended vide Appendix I.

3. Weightage to Different Aspects of Training Programme

Having prepared the Blank for ascertaining weightage to be given to different aspects of the application counterpart of the training programme, it was decided to seek opinion of the Instructors of

the training programme, it was decided to seek opinion of the Instructors of nearby STC schools. Incidentally, a seminar of the STC instructors from various parts of the State was being held at Vidya Bhawan Teachers Training College, Udaipur from 11th to 15th September, 1975. It was, therefore, decided to make use of this opportunity. Taking part in it were Instructors of various subjects having experience range of 1 to 15 years.

In all, 40 instructors were contacted personally and were handed over the blank prepared in advance for the purpose. The nature of the task in hand was explained to them and they were told about the relative importance of their opinion in this connection. The overall average of the percentages as expressed by the instructors was then calculated and tabulated as given below:

TABLE No. I

MEAN PERCENTAGES OF THE WEIGHTAGE GIVEN TO EACH OF THE APPLICATION ASPECT OF TRAINING PROGRAMME

Sl. No.	Aspect	Weightage in percentage	
		Minor Head	Major Head
1	2	3	4
1.	<u>Application Aspect of core subject</u>	20	x
	A. Principles of Education	x	4
	B. Educational Psychology	x	6
	C. Teaching Methods	x	5
	D. School organisation	x	5

1	2	3	4
2.	<u>Knowledge Aspect of the Subject Content</u>	43	x
A.	Hindi (I-VIII)	x	13
B.	Mathematics (I-VIII)	x	6.5
C.	Social Studies (I-V)	x	6.5
D.	Gen. Science (I-V)	x	5
E.	Drawing (I-V)	x	
F.	Optional Subjects (VI-VIII)	x	} 12)
3.	<u>Community Life</u>	12	x
A.	Hostel Life	x	3
B.	Social Service	x	3
C.	Community contact	x	3
D.	Participation in various Functions (celebration of Festivals, Anniversaries, etc.)	.	3
4.	<u>Katipai Vishishta Anubhava (Some significant experiences)</u>	17	x
A.	Efforts for Reducing Wastage	x	3
B.	Preadmission - Registration	x	2
C.	Enrolment Drives	x	2
D.	Evaluation & Examination	x	2
E.	Record-keeping	x	2
F.	Maintenance of various Records etc.	x	2
G.	Report Writing	x	2
H.	Surveys, Case Studies and Action Research	x	2

1	2	3	4
5. <u>Other Aspects</u>		8	x
A. Work Experience (Hobbies and Manual Work, and Handling of tools)		x	4
B. Physical Educational Programme (Games, Sports, Scouting and Guiding and First Aid)		x	4
TOTAL WEIGHTAGE		100	100

The Arithmetic Means thus obtained were subjected to the test of trustworthiness as indicated by eminent statisticians. In the words of Henry E. Garrett and R.S. Woodworth, 'we do not know, of course, the parameters of a given population. But we can, under specified conditions, forecast the parameters from our sample statistics with a known degree of accuracy. The degree to which a sample mean represents its parameter is an index of the significance or trust-worthiness of the computed sample mean. When we have calculated a statistic of the parameter based upon the entire population from which my sample was drawn'. Thus, to ensure the trustworthiness of the computed means, the Standard Deviations and the Standard Errors of the means were calculated. The formula for the computation of Standard error of mean as applied in this case, is

7. H.E. Garrett and R.S. Woodworth, Statistics in Psychology and Education. PP.184-185.

as given below⁸:

$$SE_M = \frac{\sigma}{\sqrt{N}}$$

where SE_M = Standard Error of an arithmetic mean

σ = Standard Deviation

and N = Number of cases in the sample of judges

Thereafter, it was attempted to work out the limits of the confidence that can be reposed in the parameter by the application of R.A. Fisher's fiduciary limits, the formula of which as quoted by Garrett⁹:

$$\text{Fisher's Fiduciary Limits} = M \pm 1.96 SE_M.$$

The formula shows that the fiduciary probability is 0.95, i.e., the mean population lies within the interval $M \pm 1.96 SE_M$ and only .05 of the population falls outside of these limits. The various means, standard deviations, standard errors and the fiduciary limits are as shown in the following Table:

8. ibid P. 185

9. ibid P. 191

TABLE No. II
CONFIDENCE INTERVAL FOR THE APPLICATION ASPECTS OF THE TRAINING PROGRAMME

Sl. No.	Aspect	Mean weigh- tage M	Standard Deviat- ion S.D.	Standard Error of Mean SE_m	Fiduciary limits $M \pm 1.96 SE_m$
1.	Application Aspects of Core Subjects	20	5.8	0.9	21.76 & 18.24
2.	Knowledge Aspect of the subject content	43	13.6	2.2	47.31 & 38.69
3.	Community life	12	3.8	0.6	13.18 & 10.82
4.	Katipai Vishishta Anubhava	17	4.4	0.7	18.37 & 15.63
5.	Other Aspects	8	2.8	0.4	8.78 & 7.22

N.B. Number of teachers who expressed their opinion : N = 40

It is clear from the above table that the standard errors of arithmetic means is less than 1 in almost all the cases excepting the one related to Knowledge aspect of the subject content. The low values of standard errors of means is clear indication of the greater agreement among the opinion of the teacher educators. Further, R.A. Fisher's fiduciary

limits as shown in the next column of the table, are the extent to which confidence can be reposed in the means and, therefore, the chances are thus 95 in 100 that the mean population lies within the limits expressed. 'The fiduciary probability', observe Garrett and Woodworth, 'is .95 that M_{pop} lies within the interval $M \pm 1.96 SE_M$ and .05 that it falls outside these limits'. Further, it is also clear from the table that the standard error of measurement is the highest (2.2) in the case of the Knowledge aspect of the subject content in Hindi, Mathematics, Social Studies, General Science and other subjects. This means that the Instructors of the STC Schools were not in much agreement about this aspect as they were in comparison to the other aspects of the application side of the training programme. This divergence in the opinion of the instructors may be attributed to the vast experience lag between the young and comparatively older instructors. The overall inference that could be drawn from the above table is that a greater degree of confidence can be reposed in the opinion of the teacher educators while evolving a criterion for the assessment of teachers actually working in the field.

On account of the explicit judgement of the teacher educators about the weightage to be given to major heads, the procedure of finding standard

deviations, standard errors of mean, fiduciary limits etc., was not repeated in the case of minor heads.

4. Draft of the Questionnaire-cum-Test Paper

After deciding the weightage to be given to different aspects of training programme, it was decided to prepare the questionnaire-cum-test paper. For this purpose, a team of six* persons met in the State Institute of Education, Udaipur, for 5 days and prepared the preliminary draft of questionnaire-cum-test paper. In all, 50 items were framed in proportion to the weightage decided by the team of judges. For the sake of convenience, items on two sections viz., Katipai Vishishta Anubhava and other Aspects of the training programme were synchronized into one section. Thus, the number of aspect-wise item framed for this purpose are as follows:

Part A: Application Aspect of Core Subjects	14 items
Part B: Knowledge of Subject content	13 items
Part C: Community Life	9 items
Part D: Katipai Vishishta Anubhava and other Aspects	14 items
<hr/>	
	50 items

* The team included the Chief Investigator, Senior Research Fellow; One Research Asstt., One Retd. Research Officer, and 2 knowledgeable teacher educators from the field.

5. Try-out and Final Form of Questionnaire-cum-Test Paper:

The preliminary draft of the questionnaire-cum-test paper was tried out on 10 teachers (6 trained and 4 untrained) working in Udaipur city or in nearby schools of the city. The basic purpose of this try-out was to find out the language angularities, and to ascertain the time-limit required in solving the items of the questionnaire. As a result of this try out, quite a good number of corrections in the language of the items were made; some of the items were deleted and a few items were replaced by new items in the questionnaire. The final form thus prepared (Appendix II) for the purpose of investigation consisted of 50 items which could be responded in 150-minutes' time.

II. ADOPTION OF TEACHING APTITUDE TEST.

It is a known fact that anyone who is to become a teacher needs an intellect capable of grasping not only the subject content and its place in the curriculum but also requires sufficient amount of knowledge about aims and processes of education. Even if it is assumed that anyone who joins the profession is bright, learns readily and assimilates thoroughly what he studies, still it remains to be answered if he could also teach others well. This aspect of a man's personality is most important for dealing with the

human material in the classroom irrespective of the fact that the person concerned is trained or untrained.

In order to know about this aspect of the personality of the units of the sample, it was decided to adopt a standardized Teaching Aptitude Test by Jai Prakash for comparing the aptitude of trained and untrained, male and female teachers. This test, primarily standardised for measuring the aptitude of persons towards teaching profession, has ten sub-tests and a total of 150 items. Each sub-test contains 15 items. There is no time-limit for the test, but generally the examinees complete the test within 30 minutes. The Test has the following areas belonging to each of the ten sub-tests.¹⁰

1. Cooperative Attitude: This trait has been used for measuring the cooperative attitude of the teachers towards their taughts, society and the nation. This trait is an essential link for the relationship between the teacher and the taught, the school and the community, and the society and the nation.
 2. Kindliness: The items under this area have been used with regard to the general and particular attention of the teacher which is to be devoted for full growth and development of the personality of the pupil and to remove the hurdles and handicaps in the way of growth and development of pupil.
10. Manual For Teaching Aptitude Test by Jai Prakash
P. 3-4

3. Patience: Patience is an important attribute of teacher's personality, as he very often meets such a critical situation which needs patience and tolerance on his part.
4. Wide Interest: The teacher is not supposed to stick to his work of teaching the subjects only, but he is also an active participant in co-curricular activities outside the institution. He wants to see his taught growing physically, mentally, culturally, socially and in other aspects alike.
5. Fairness: This element has been taken in the test to measure the fairness and impartiality of the teacher. This is one of the most essential traits of a teacher's personality.
6. Moral character: Moral status in the opinions of adults, specially concerning their adherence to the adults standard, have been tried to see through the items constituting this area.
7. Discipline: Discipline and problems of conduct in the classroom and elsewhere, and the methods employed in dealing with the problems have been contained in this area.
8. Optimism: This trait is more essential in the personality of a teacher as he is supposed to be always optimistic.

9. Scholarly Taste: A teacher is always a student in the acquisition of knowledge. He is always thirsty of knowledge and as such, items in this sub-test have been included in the test which measure the scholarly taste of the testees.

10. Enthusiasm: Enthusiasm is an important element of the personality of a good teacher. The importance of this trait has increased very much in the present age.

III. ADMINISTRATION AND SCORING OF TOOLS

After finalizing the items for the questionnaire-cum-test paper, and after having prepared the tools necessary for the piece of research, the process of data collection commenced from 25th March 1976 and concluded on 15th May 1976 by the help of the data collection team*. On an average, it was noticed that

* Some of the members of the data collection team came across certain interesting episodes; as the data for this piece of research was collected during the period of Emergency in the country.

- a) Almost all the members of the team stated that nearly 25% of the units of the sample under untrained teachers got frightened by the members of the team and the teachers concerned concluded that it was not for a piece of research but was a device to retire untrained teachers.
- b) One of the units under untrained teachers stated, "Sir, I have to get my daughter married and thereafter if retired, I would have no objection to it".
- c) Another fellow teacher at another place said, "Sir, today I have realised that I was a fool. Had I got myself trained at the appropriate time, I would have not seen this day".

The interesting phase of all these episodes was that even after giving a series of explanations to them, the units of the sample never got convinced.

the units took nearly two and a half hours' time for solving the questionnaire-cum-test paper and nearly half-an-hour's time for responding to the teaching aptitude test. It was also seen that the members of the data collection team took nearly 8 to 10 hours for collecting information from and about each of the teachers selected under the sample.

Having collected the data from 550 units of the sample, it was now of prime importance to decide the mode of scoring the questionnaire-cum-test paper. For this purpose, a meeting of the team of the same six persons, who prepared the tool, was called and a clear mode of assessment of the tool was drawn out. The teaching aptitude test was scored as per instructions given in the manual of the standard test.

IV. COMPARISON BETWEEN THE PERFORMANCE OF TRAINED AND UNTRAINED TEACHERS

Having scored both the tools, it was attempted to subject the data to rigorous statistical treatment to find out the comparative difference between the performance of the two types of teachers, viz., the trained and untrained teachers. Since the items included in this section are many in number, the following strategy is being pursued to present the entire information.

A. Scores on Questionnaire-cum-Test paper

1. Distribution of the scores.
2. Homogeneity of the samples.
3. Comparative study of the scores.

B. Scores on Teaching Aptitude Test

1. Distribution of the scores
2. Homogeneity of the samples
3. Comparative study of the scores.

The details of each of the aspects of the above mentioned strategy, are being presented below:

A. SCORES ON QUESTIONNAIRE-CUM-TEST PAPER

After scoring the whole lot of questionnaire-cum-test paper, section-wise, such as, knowledge of subject-content, application aspect of training, community life, Katipaya Vishishta Anubhava, and other aspects, as well as the scores in entirety were given different treatments depending upon the nature of analysis envisaged for arriving at conclusions. The section-wise scores were used for finding out the difference between performance of the trained and untrained male and female teachers whereas the overall scores were utilized for subjecting them to various statistical Tests.

1. Distribution of the scores

The overall scores so obtained were subjected to statistical treatment to obtain the desired results about the central tendency and the variability of the overall scores as well as on each of the strata of the sample. This operation was got done at the Computer Centre, Physical Research Laboratory, Ahmedabad. The main purpose of this operation was to see whether the overall sample selected for the purpose of investigation had a normal distribution. The various measures of Central tendency and variability, computed on the scores, are shown in the Table No. III.

TABLE NO. III
MEASURES OF CENTRAL TENDENCY AND VARIABILITY OF THE SCORES ON
QUESTIONNAIRE-CUM-TEST.

Sl. No.	Various Statistics	Overall Sample	Trained Teachers		Untrained Teachers		Male Teachers		Female Teachers	
			Trained	Untrained	Trained	Untrained	Trained	Untrained	Trained	Untrained
1.	N	550	363	187	192	88	171	99		
2.	Mean	40.36	42.27	36.67	44.28	40.14	40.25	33.58		
3.	Median	40.23	41.84	36.30	43.83	39.73	39.84	33.24		
4.	Mode	40.0	41.42	35.93	43.39	39.33	39.44	32.90		
5.	S.D.	11.26	11.75	10.19	12.30	11.15	11.18	9.33		
6.	Skewness	0.034	0.201	0.108	0.109	0.110	0.110	0.109		
7.	Kurtosis	0.235	0.246	0.213	0.257	0.233	0.234	0.195		

The following inferences could be drawn on the basis of the above table:

1. The values of Mean, Median, and Mode are almost identical.
2. The values of skewness are also very small (min. .02 and max. 0.2) for each of the strata of the sample.

The low values of the central tendencies of the distributions clearly establish that the distributions relating to all the strata of the sample are normal.

Similarly, the measures of 'peakedness' viz., the kurtosis also denote that various strata of the sample are nearing mesokurtic. The only distribution relating to untrained female teachers seems

to be platykurtic whereas the rest of the distributions are nearing mesokurtic. This is really the plus point of the samples under reference.

2. Homogeneity of the Samples

It was seen in the previous section that as many as seven strata of the sample were used to study the behaviour of trained and untrained male and female teachers. Accordingly, it was quite natural to know whether it was reasonable to believe that all the constituent units of the samples had the same mean and all the units of the sample had the same variance.

As a matter of fact, there are several methods by which the hypothesis $\sigma_1^2 = \sigma_2^2 = \sigma_3^2 = \dots = \sigma_k^2$ can be tested. The important ones are : H.O. Hartley's method, W.G. Cochran's method, C. Eisenhart, M.W. Hotzay, and W.A. Whallie's method, M.S. Bartlett's method, and C.M. Thompson and M. Morrittong's method.¹¹ Some of the methods are comparatively easy to apply whereas some are very difficult and arithmetically laborious. In order to save some of the mathematical labour, it was decided to seek the computer's assistance. Owing to certain reasons, the plan of seeking computer's fullest assistance could not be materialised and therefore, it was decided to restrict to the easiest

11. Helen M. Walker and Joseph Lev. Statistical Inference. P. 191.

method of working out the homogeneity of samples, i.e. the Hartley's test, wherever possible.

In view of the comparison of different strata, only three strata were considered proper where the Hartley's test could be conveniently used. The strata are : trained and untrained male teachers, trained and untrained female teachers, and trained and untrained male and female teachers, where only two groups ($K = 2$) whose variances were to be tested.

Hartley contends that if the largest ratio in a set of variance is not significantly large, none of the others can be significantly large. Hartley calls this largest F-ratio¹² -

$$F_{\max.} = \frac{s^2_{\max}}{s^2_{\min.}}$$

The above mentioned formula has been expounded further by B.J. Winer stating that¹³ -

$$F_{\max} = \frac{\text{Largest of } K \text{ treatment variance}}{\text{Smallest of } K \text{ treatment variance}}$$

Further, in the recently conducted two studies (1972) on 'Robust Tests for Homogeneity of Variance' it was established by Paul A. Games, Henry B. Winker

12. ibid, 192

13. B.J. Winer, Statistical Principles in Experimental Design, P. 93.

and David A. Probert that 'if the population samples are platykurtic or mesokurtic ($r^2 < 0.5$), one should use the Bartlett or $F_{max.}$ tests, for finding out, the homogeneity of tests'.¹⁴

Since the three strata under reference were found to be nearing mesokurtic or platykurtic, it was preferred to the Hartley's test of homogeneity of variance. The values of Hartley's Critical Ratio were, however, taken from Helen M. Walker and Joseph Lev's book at pages 462-63. The results are presented below:-

14. Paul A. Games, Henry B. Winkler and David A. Probert, Educational and Psychological Measurement Pp. 887-909

TABLE No. IV
HARTLEY'S TEST OF HOMOGENEITY ON THE TRAINED AND UNTRAINED MALE AND FEMALE TEACHERS

Level of Analysis	σ_{\max}^2	σ_{\min}^2	$\frac{\sigma_{\max}^2}{\sigma_{\min}^2}$	F max	N _{max}	K	Hartley's Critical F-Ratio	Homo. Heterogeneous
Trd. & Untrd. Male Teachers (N ₁ =192 N ₂ =88)	151.29	124.31	1.21	1.21	192	2	1.00	Heterogeneous
Trd. & Untrd. Female Teachers (N ₁ =171 N ₂ =99)	124.99	87.04	1.43	1.43	171	2	1.00	Heterogeneous
Overall Trd. & Untrd. Male & Female Teachers (N ₁ =363 N ₂ =187)	138.06	103.83	1.33	1.33	363	2	1.00	Heterogeneous

It is clear from the above table that none of the observed values of F i.e. 1.21 in the case of trained and untrained male teachers, 1.43 in the case of female teachers, and 1.33 in case of overall scores, lies in the critical region $\left\{ \begin{matrix} 1.00 \\ 1.00 \end{matrix} \right\}$ as seen from the 95th and 99th percentile values of $F_{max} = S^2_{max.}/S^2_{min.}$ in a set of K mean squares each based on n Degrees of Freedom¹⁵. Thus, the null hypothesis of homogeneity of variance is rejected and it could reasonably be concluded that the groups show significant heterogeneity on the scores on questionnaire cum-test paper and all the strata of the sample are heterogeneous rather than homogeneous.

15. Helen M. Walker and Joseph Lev. Op. Cit.
P. 462.

3. Comparative Study of the Scores on Questionnaire-cum-test paper

Although at the primary institution level, there is nothing like subject teachers, yet in this effort of understanding the performance of trained and untrained teachers, it was thought worthwhile to know the subject-wise competencies of the trained and untrained teachers separately. For this purpose, the method of working out critical ratio of testing the significance between the mean performance of the two types of teachers was employed. Since there are a large number of variables and strata of the samples, it has been attempted to present the state-level comparisons at length and the range-level comparisons in brief. The details of each of the aspects of comparison are as follows:

a) State Level Comparisons

In this effort of comparison, three basic strata were found to be useful. They are: Trained and Untrained male teachers, Trained and Untrained female teachers and trained and untrained Male and Female Teachers. The different values of mean, standard error of mean in relation to trained and untrained male teachers are being presented in the following table:

COMPARATIVE STUDY OF THE PERFORMANCE OF TRAINED AND UNTRAINED TEACHERS IN THE STATE. (N₁ = 192 and N₂ = 88)

Sl. No.	Aspects of preparedness	Trained Teachers			Untrained Teachers			Critical Sig/ Ratio	Level
		Mean M ₁	S.D. σ_1	S.E.m ₁	Mean M ₂	S.D. σ_2	S.E.m ₂		
1. Knowledge of Subject:									
a)	Maths	3.45	1.13	0.08	3.03	1.09	0.12	2.94	Sig. •01
b)	Hindi	6.05	1.85	0.13	5.85	2.18	0.23	0.78	N.Sig. xx
c)	Soc. Studies	4.03	1.26	0.09	3.55	1.64	0.17	2.67	Sig. 0.01
d)	Gen.Science	2.97	1.07	0.08	2.38	1.19	0.13	4.11	Sig. 0.01
e)	Others	7.62	2.06	0.15	7.91	2.32	0.25	1.04	N.Sig. xx
2. Application of Knowledge									
		6.41	2.87	0.21	5.80	2.95	0.31	1.63	N.Sig. xx
3. Community Life									
		4.55	1.80	0.13	4.23	2.02	0.22	1.31	N.Sig. xx
4. Katipaya Vishishta Anubhava									
		5.57	2.22	0.16	4.46	2.58	0.28	3.69	Sig. 0.01
5. Other Aspects									
		3.43	1.47	0.11	2.93	1.52	0.16	2.64	Sig. 0.01

It is evident from the table No. V that:

- (a) the trained male teachers have a clearcut edge over the untrained male teachers in relation to their command over the subjects like, mathematics, social studies and general science. The difference is significant at the level of .01 which means that the null hypothesis is straight away rejected so far as the mastery over the content on the part of trained teachers is concerned.
- (b) the untrained teachers, on the other hand, establish their superiority over the trained teachers in relation to their mastery over subjects other than the basic subjects. In rest of the pursuits like community life, application of knowledge, although the difference is not significant yet the trained teachers claim their superiority over the untrained teachers, and

(c) the difference between the mean performance of trained and untrained male teachers is significant in relation to their performance in 'Katipaya Vishishta Anubhava' and other aspects of school functioning; the trained mass seems to be superior to them.

Thus, by and large, it can be easily concluded that the trained male teachers have definite superiority over the untrained male teachers in respect of their mastery over the content and mode of school functioning.

Similarly, on working out different statistics regarding the performance of trained and untrained female teachers, the various results are as presented in the following table:

TABLE No.VICOMPARATIVE STUDY OF THE TRAINED AND UNTRAINED FEMALE TEACHERS OF THE STATE(N₁ = 171, N₂ = 99 & N = 270)

Sl. No.	Aspects of preparedness	Trained Teachers			Untrained Teachers			Criti cal Ratio	Sig/ Level N.Sig.
		Mean M ₁	S.D. σ_1	S.E.M ₁	Mean M ₂	S.D. σ_2	S.E.M ₂		
1. Knowledge of Subject:-									
a) Maths.	2.91	1.03	0.08	2.59	1.23	0.12	2.26	Sig. 0.05	
b) Hindi	5.69	1.97	0.15	5.21	2.10	0.21	1.86	N.Sig. xx	
c) Soc. Studies	3.35	1.32	0.10	2.98	1.52	0.15	2.06	Sig. 0.05	
d) Gen. Science	2.51	1.03	0.08	1.97	1.12	0.11	4.03	Sig. 0.01	
e) Others	6.69	2.69	0.21	6.28	2.90	0.29	1.17	N.Sig. xx	
2. Application of Knowledge									
	6.38	3.21	0.24	4.81	2.53	0.25	4.18	Sig. 0.01	
3. Community Life									
	4.16	1.73	0.13	3.43	1.76	0.18	3.30	Sig. .01	
4. Katiyaya Vishishta Anubhava									
	5.17	2.28	0.17	3.76	2.50	0.25	4.75	Sig. .01	
5. Other Aspects									
	3.39	1.20	0.09	2.55	1.51	0.15	5.02	Sig. .01	

The following inferences could be drawn from the above table:-

1. Out of nine, seven critical ratios (5 at .01 level and 2 at .05 level) are significant at either of the levels of significance. This means that trained female teachers have definite superiority over the untrained female teachers. Thus, the null hypothesis that there is no significant difference between the mastery over the subject content and role-playing in school functioning of trained and untrained female teachers stands rejected.
2. Only two ratios relating to mastery over Hindi language and the subjects other than four basic ones, are non-significant. Yet, the trained group has an edge over the untrained group in relation to their larger mean scores.
3. On the basis of the above findings it can be concluded that the trained female teachers are far better than the untrained female teachers.

Having compared the performance of trained and untrained male and female teachers separately, it was decided to compare the performance of trained and untrained teachers on the whole irrespective of their sex. The statistics thus computed in this context are as follows:

TABLE NO. VII

COMPARATIVE STUDY OF THE PERFORMANCE OF OVERALL TRAINED AND UNTRAINED TEACHERS ON
QUESTIONNAIRE-CUM-TEST PAPER

(N₁=363, N₂=187)

Sl. ^o Aspects of No. preparedness	Trained Teachers			Untrained Teachers			Criti cal Ratio	Sig./ N.Sig.	Leve l
	Mean M ₁	S.D. σ_1	S.E.m ₁	Mean M ₂	S.D. σ_2	S.E.m ₂			
1. Knowledge of Subject :-									
a) Maths	3.20	1.12	0.06	2.80	1.18	0.09	3.38	Sig. .01	
b) Hindi	5.88	1.91	0.10	5.51	2.15	0.16	2.03	Sig. .05	
c) Soc. Studies	3.71	1.33	0.07	3.25	1.60	0.12	3.55	Sig. .01	
d) Gen. Science	2.75	1.07	0.06	2.16	1.17	0.19	5.91	Sig. .01	
e) Others	8.18	2.42	0.13	7.05	2.75	0.20	0.59	N.Sig. xx	
2. Application of Knowledge									
3. Community Life	6.39	3.03	0.16	5.27	2.77	0.20	4.22	Sig. .01	
4. Katipaya Vishista Aribhava									
5. Other Aspects	3.41	1.35	0.07	2.73	1.52	0.11	5.39	Sig. .01	

On the basis of the above table, the following conclusions can be drawn:

1. In almost all the cases, the trained teachers have emphatically established their superiority over the untrained teachers. Although the untrained teachers had a minimum of ten years' experience of teaching primary or upper primary classes, yet the trained teachers with minimal experience, i.e., some of them soon after getting themselves trained and some others having one or two years experience, superseded the untrained teachers. Thus, the null hypothesis that there is no significant difference between the preparedness and role playing of the trained and untrained teachers stands rejected altogether.
2. The only one ratio regarding the knowledge of subjects is non-significant, yet the mean score still establishes the superiority of trained teachers.

Conclusively, it can be said that trained teachers are definitely superior to the untrained teachers so far as the different aspects of preparedness of a teacher is concerned.

b) Range Level Comparisons

In making range level comparisons, if the procedure followed in the preceding section was to be pursued here, the strata of comparisons would have been many, hence, for the sake of convenience, it is being attempted to put forth only those results which expose facts about trained and untrained male and female teachers. Further, in order to simplify the procedure of drawing range-wise inferences, a summary of the results is being presented in the table No.VIII.

TABLE NO. VIII

CRITICAL APPRAISAL OF THE RANGE-WISE RESULTS ABOUT THE PREPAREDNESS OF TRAINED
AND UNTRAINED MALE AND FEMALE TEACHERS

S1.	Aspects of No. preparedness	Jaipur-Ajmer Range Sig. (.01)	Jaipur-Ajmer Range Sig. (.05) Sig.	Jodhpur-Bikaner Range Sig. (.01)	Jodhpur-Bikaner Range Sig. (.05) Sig.	Udaipur-Kota Range Sig. (.01)	Udaipur-Kota Range Sig. (.05) Sig.	Non- sig. (.05) sig.
1. Knowledge of subjects:								
a) Maths	x	x	✓	✓	x	✓	x	x
b) Hindi	x	x	✓	x	x	✓	x	x
c) Soc. Studies	✓	x	x	x	✓	x	x	✓
d) Gen.Science	✓	x	x	✓	x	✓	x	x
e) Others	x	x	✓	x	✓	x	x	✓
2. Application of Knowledge								
3. Community Life	x	x	✓	x	✓	x	✓	x
4. Katipaya Vishishta Anubhava			✓	x	x	✓	✓	x
5. Other Aspects	✓	x	✓	x	x	✓	x	x
Total:	4	x	5	1	4	4	5	2

The range-wise figures present a little different story. The conclusions are as follows:

Jaipur-Ajmer Range:

- (a) The untrained teachers of this range have tried to establish their superiority over trained teachers in relation to their knowledge of Mathematics, Hindi and other subjects. The untrained teachers have also claimed themselves superior in leading community life and in respect of the application of knowledge in real life situations.
- (b) The trained teachers have claimed their superiority in relation to mastery over subjects such as, Social Studies and General Science, in matters of 'Katipaya Vishishta Anubhava' and other aspects of the curriculum meant for SPVs.

- (c) Thus, it could be said that the untrained teachers of this range of administration are superior to trained teachers.

Jodhpur-Bikaner Range:

- (a) The trained teachers of this range are superior to untrained teachers in matters of knowledge of Mathematics, General Science, application of knowledge, Community Life, and other aspects of STC curriculum.
- (b) The untrained teachers are superior in their knowledge of Hindi, Social Studies and other subjects taught upto Upper Primary classes, and in the matters of 'Katipaya Vishishta Anubhava'.
- (c) Thus, the trained mass is superior to untrained mass in 5 aspects in comparison to 4 aspects of the untrained mass.

Udaipur-Kota Range:

- (a) The trained teachers of this range are superior to untrained teachers in matters of -
- Knowledge of Mathematics
 - Knowledge of General Science
 - Knowledge of Hindi
 - Application aspect of knowledge
 - Katipaya Vishishta Anubhava (organisation of)

- other aspects of the training programme
 - and, in living a community life.
- (b) Only two aspects i.e., knowledge of Social Studies and other subjects, seem to be the strongholds of the untrained teachers.
- (c) Thus, the trained teachers seem to be superior to untrained teachers in seven out of nine aspects of comparison.

On the whole, the trained mass of teachers (16 ratio) has evidently an edge over the untrained teachers (11 ratios) thereby leading to the conclusion that the null-hypothesis about no significant difference between the two categories of teachers stands rejected.

B. SCORES ON TEACHING APTITUDE TEST

The scores obtained on the Teaching Aptitude Test were also subjected to the same treatment as was given to the scores on questionnaire-cum-test paper. The basic objective of this treatment was to know as to how far the teaching aptitude among the trained and untrained male and female teachers varies.

1. Distribution of the Scores.

As a first measure, it was decided to know whether the distribution of the scores on the test tends towards normality or not. For this purpose,

the central tendency and the variability of the scores on each strata of the sample were got mechanically computed by the help of the computer. The various statistics related to central tendency and variability are presented in the table No. IX.

TABLE NO. IXMEASURES OF CENTRAL TENDENCY AND VARIABILITY OF THE SCORES ON TEACHING APTITUDE TEST

<u>Sr. No.</u>	<u>Various Statistics</u>	<u>Overall Sample</u>	<u>Trained Teachers</u>	<u>Untrained Teachers</u>	<u>Male Teachers Trained</u>	<u>Female Teachers Trained</u>	<u>Untrained -ed</u>
1.	N	550	363	187	192	88	171
2.	Mean	163.72	161.07	165.66	164.80	170.09	159.04
3.	Median	163.34	160.69	165.16	164.30	169.57	158.56
4.	Mode	160.71	158.11	162.51	161.67	166.85	156.02
5.	S.D.	55.21	54.31	55.82	55.53	57.32	53.59
6.	Skewness	0.021	0.020	0.026	0.027	0.027	0.026
7.	Kurtosis	0.262	0.257	0.265	0.263	0.272	0.254

The above table clarifies that -

- (a) the values of Mean, Median and Mode are very near to each other; particularly the arithmetic Mean and Median values.
- (b) the values of skewness are negligible, and
- (c) the values of Kurtosis are also nearer to 0.263, desired for a normal distribution.

All these facts establish that the distribution under reference is normal and mesokurtic.

2. Homogeneity of the Samples.

In order to support and substantiate the finding about the homogeneity of the samples, it was decided to apply the Hartley's test on the scores of the same three strata viz., trained and untrained male teachers, trained and untrained female teachers, and trained and untrained male and female teachers. The basic objective of this operation, as stated earlier, was to ascertain whether the samples selected for the purpose of investigation do not conform to be homogeneous. The Hartley's F-ratios as worked out in this case, are as presented in Table No. X.

TABLE No. X

HARTLEY'S TEST OF HOMOGENEITY OF THE TRAINED AND UNTRAINED MALE AND FEMALE
TEACHERS ON THE SCORES ON TIT

Level of Analysis	\bar{X} max.	\bar{X} min.	S^2 max.	S^2 min.	F max	M max	K	Hardey's critical F-Ratio	Homo- geneous
Trd. & Untrd. Male Teachers $N_1 = 192$, $N=88$	3285.58	3083.58	1.06	1.06	192	2	1.00	1.00	Hetero- geneous
Trd. & Untrd. Female Teachers $N_1 = 171$, $N=99$	2968.07	2871.89	1.03	1.03	171	2	1.00	1.00	Hetero- geneous
Overall Trd. and Untrd. Male and Female teachers $N_1 = 363$, $N=187$	3115.87	2949.57	1.05	1.05	363	2	1.00	1.00	Hetero- geneous

It is evident from the above table that none of the observed values of F_{\max} i.e., 1.15 in the case of trained and untrained male teachers and 1.09 in the case of trained and untrained female teachers, lies in the critical region (1.00) as seen from the 95th and 99th percentile values of $F_{\max} = S_{\max}^2 / S_{\min}^2$ in a set of K mean squares each based on n degrees of freedom : Therefore, the null hypothesis of homogeneity of variance is rejected and thus it can reasonably be concluded that the samples show significant heterogeneity on the test on teaching aptitude.

Similarly, the observed value of F_{\max} i.e., 1.05 in the case of trained and untrained male and female teachers combined, further supports the view-point that it also does not lie in the critical region of the Hartley's F-ratio and hence the null-hypothesis $\sigma_1^2 = \sigma_2^2 = \sigma_3^2 = \sigma_4^2 = \dots = \sigma_n^2 = \sigma_2^2$ stands rejected and both the strata - trained and untrained, of the sample are heterogeneous in nature rather than homogeneous. This fact further increases the credibility of this piece of investigation.

3. Comparative Study of the Scores on Teaching Aptitude Test.

As pointed out earlier, the scores on the teaching aptitude test comprised the scores on different aspects of the aptitude, viz., the co-operative aptitude, kindness, patience, wide interests, fairness, moral character, discipline, optimism, scholastic taste and enthusiasm of the units of the samples. Therefore, in the process of analysis of scores on this test, it was attempted to test the significance* between the overall as well as between the ten different aspects of the aptitude of the trained as well as untrained male and female teachers. For the sake of convenience, the pattern of the mode of behaviour of various strata has been maintained to be the same throughout the process of comparison of scores. The details of each of the aspects of comparison have been given in the following paragraphs.

* According to the advice of Henry Garrett and R.S. Woodworth (*Statistics in Psychology And Education*, P. 223), the critical ratio should be used in such cases where the sample size exceeds 30. Since, in this piece of investigation, each of the strata of the sample exceeds the prescribed number, it was decided to make the comparisons by working out the critical ratios.

a) State Level Comparisons

The different values of mean, standard deviation, standard error of mean etc., on the scores of trained and untrained male teachers are as follows:-

COMPARATIVE STUDY OF THE SCORES ON T.A.T. OF THE TRAINED AND UNTRAINED MALE
TEACHERS OF THE STATE

Sl. No.	Aspects of Aptitude	Trained Teachers(192)			Untrained Teachers(88)			Critical N.Sig.	Level
		Mean	S.D.	S.E. _{m₁}	Mean	S.D.	S.E. _{m₂}		
		M ₁	01	M ₂	02	M ₂	02		
1.	Co-operative Aptitude	14.98	8.53	0.61	14.76	8.58	0.91	0.20	N.Sig. -
2.	Kindness	15.13	8.02	0.57	15.70	7.48	0.80	0.57	N.Sig. -
3.	Patience	3.60	12.07	0.87	1.92	13.28	1.41	1.05	N.Sig. -
4.	Wide Interests	25.48	11.42	0.82	25.60	7.32	0.78	0.09	N.Sig. -
5.	Fairness	28.66	9.24	0.67	29.60	8.12	0.86	0.83	N.Sig. -
6.	Moral Character	16.37	11.41	0.82	18.27	8.10	0.86	1.41	N.Sig. -
7.	Discipline	13.14	9.87	0.71	11.98	9.20	0.98	0.93	N.Sig. -
8.	Optimism	13.49	12.44	0.90	15.52	11.54	1.23	1.30	N.Sig. -
9.	Scholastic Taste	11.69	10.16	0.73	13.25	8.60	0.92	1.33	N.Sig. -
10.	Enthusiasm	22.26	14.52	1.05	23.51	12.16	1.30	0.70	N.Sig. -

On the basis of the above table, the following inference can be drawn:

There does not seem to be any significant difference between either of the aspects of teaching aptitude between the trained and untrained male teachers. Thus the null hypothesis that there is no significant difference between the teaching aptitude of male trained and untrained teachers must be accepted. This further means that the male teachers serving the Department of Education do not have aptitude towards teaching irrespective of the fact that they are trained or untrained.

Having compared the scores on different aspects of teaching aptitude of male teachers, the procedure was repeated in the case of trained and untrained female teachers. The various statistics are as follows:-

TABLE No. XII

COMPARATIVE STUDY OF THE SCORES ON T.A.T. OF THE TRAINED AND UNTRAINED FEMALE
TEACHERS OF THE STATE

Sl. No.	Aspects of Aptitude	Trained Teachers(171)			Untrained Teachers(99)			Criti- cal Ratio	Sig./ N.Sig.	Level
		Mean M_1	S.D. σ_1	$S.E.m_1$	Mean M_2	$S.D.$ σ_2	$S.E.m_2$			
1.	Co-operative Aptitude	14.36	7.46	0.56	11.76	8.44	0.85	2.63	Sig. .01	
2.	Kindness	15.55	8.63	0.66	15.01	8.09	0.81	0.51	N.Sig. -	
3.	Patience	0.08	12.35	0.95	1.60	12.53	1.26	1.07	N.Sig. -	
4.	Wide Interests	25.43	7.91	0.60	23.24	11.02	1.11	1.89	N.Sig. -	
5.	Fairness	26.96	9.52	0.73	27.75	8.41	0.84	0.68	N.Sig. -	
6.	Moral Character	15.81	9.77	0.75	18.44	7.82	0.79	2.29	Sig. .05	
7.	Discipline	10.89	8.36	0.64	12.74	7.33	0.74	1.82	N.Sig. -	
8.	Optimism	14.86	10.72	0.82	15.34	9.07	0.91	0.37	N.Sig. -	
9.	Scholastic Taste	11.70	8.67	0.66	12.59	7.89	0.79	0.84	N.Sig. -	
10.	Enthusiasm	23.48	10.79	0.82	23.22	9.29	0.93	0.20	N.Sig. -	

The following inferences can be drawn on the basis of above table:

1. The trained female teachers seem to differ significantly from the untrained female teachers in respect of cooperativeness and moral character - the two chief constituents of teaching aptitude. Thus the null hypothesis in this case stands rejected at the confidence levels of .01 and .05 respectively.
2. Regarding other aspects of teaching aptitude, the trained or untrained female teachers do not seem to differ significantly. Hence the null hypothesis stands.

Further, the various statistics about the scores on trained or untrained male and female teachers are being presented below with the objective of finding significance between the various aspects of teaching aptitude:

TABLE NO. XIII

COMPARATIVE STUDY OF THE SCORES ON T.A.T. OF THE TRAINED AND UNTRAINED
TEACHERS OF THE STATE

Sl. No.	Aspects of Aptitude	Trained Teachers(363)			Untrained Teachers(187)			Criti cal N.Sig. Ratio	Sig./ Level
		Mean M ₁	S.D. O ₁	S.E.m ₁	Mean M ₂	S.D. O ₂	S.E.m ₂		
1.	Co-operative	14.69	8.04	0.42	13.17	8.61	0.63	2.05	Sig. .05
2.	Kindness	15.33	8.30	0.44	15.34	7.80	0.57	0.01	N.Sig. -
3.	Patience	1.87	12.33	0.65	1.75	12.85	0.94	0.11	N.Sig. -
4.	Wide Interests	25.46	9.91	0.52	24.35	9.51	0.69	1.25	N.Sig. -
5.	Fairness	27.86	9.39	0.49	28.62	8.30	0.61	0.93	N.Sig. -
6.	Moral Character	16.11	10.66	0.56	18.36	7.93	0.58	2.55	Sig. .05
7.	Discipline	12.08	9.24	0.48	12.38	8.25	0.60	0.37	N.Sig. -
8.	Optimism	14.14	11.67	0.61	15.43	10.28	0.75	1.28	N.Sig. -
9.	Scholastic Taste	11.69	9.47	0.50	12.90	8.21	0.60	1.54	N.Sig. -
10.	Enthusiasm	22.84	12.90	0.68	23.36	10.71	0.78	0.47	N.Sig. -

The above table reveals that the trained and untrained male and female teachers differ significantly in respect of cooperative aptitude and moral character. The level of significance being at .05 level of significance.

In rest of the aspect of teaching aptitude, such as, kindness, patience, wide interest, fairness, discipline, optimism, scholastic taste and enthusiasm, the trained male and female teachers are as good as untrained teachers.

This leads to the conclusion that barring two aspects of teaching aptitude i.e., cooperative aptitude and moral character, the teachers working in the Department of Education, whether trained or untrained, are rather neutral towards the other eight aspects of the teaching aptitude.

2. Range Level Comparisons

The basic purpose of making range-wise comparisons was to see whether there exists any significant difference between the aptitude of trained and untrained teachers, of various ranges of educational administration. In this effort, the comparisons were made between the trained and untrained male and female teachers categorized into three strata of the samples. The various statistics alongwith related critical ratios for all the three strata of the samples have been presented vide Appendix III. It is clear from all the three tables that none of the critical ratios is significant at either of the levels of significance. This establishes conclusively that so far as the teaching aptitude is concerned, there is no difference between the aptitude of trained or untrained teachers, towards teaching pupils in school situations. In other words, the teaching aptitude does not seem to hold any relationship with the teachers being trained or untrained.

CONCLUDING STATEMENT

The main objective of this chapter was to develop a criterion for the assessment of preparedness of teachers, whether trained or untrained, and to see whether there exists any aptitudinal difference between the trained and untrained teachers. The overall conclusion which emerges from this effort is that the trained teachers differ significantly from the untrained teachers particularly from the point of view of the mastery over the content whereas there seems to be no significant difference between the aptitude of trained or untrained male and female teachers working in the State of Rajasthan.

CHAPTER IV

CLASSROOM BEHAVIOUR OF TEACHERS : FIACS APPROACH

'The role of classroom climate is crucial to the learning process'

Perkins

Classroom behaviour of teachers, a two-way communication, occupies a predominant position in the teaching learning process. It is this aspect of an effective teacher which helps in commanding respect and popularity in the society as well as in preparing the future generation of the nation. It is perhaps with this viewpoint, sufficient emphasis has been laid on the presentation aspect of a teacher in classroom while undergoing a preservice training and perhaps with this understanding different methods of teaching have been made an integral part of the teacher education programme in the State.

The functional aspect of the programme, however, presents an altogether different point of view. As soon as the prospective teachers get a toehold in the department, they quickly try to relapse or they automatically relapse in to the old rut of hackneyed class-room practices bidding goodbye to all those learnt in the 'Shikshak Prashikshan Vidyalayas'.

The basic reason for such a behaviour of teachers can be attributed to the dominance of the old rut of classroom teaching prevalent among the teachers of comparatively longer standing in the department and also to the cleavage between the theory and practice in the teacher education programme. As such, any analysis and description of the classroom behaviour of teachers - trained or untrained, using comparatively more sophisticated technique unknown to both the types of teachers, should provide an interesting information as well as it should pave a fair ground for ascertaining the effectiveness of teachers in classroom situations. Accordingly, in this chapter, it has been attempted to have a comparative assessment of the classroom behaviour of trained and untrained teachers using the technique of FIACS.

FLANDERS INTERACTION ANALYSIS CATEGORY SYSTEM (FIACS)

It is one of the most powerful observational device to study and recording the verbal class-room behaviour of teachers. The entire class-room behaviour of a teacher has been perceived into ten categories. The description of the categories on which the tool is based is as given in the following table:

TABLE NO. I

BEHAVIOURAL CATEGORIES FOR INTERACTION ANALYSIS UNDER FIACS

TEACHER TALK	INDIRECT INFLUENCE	1. <u>ACCEPTS FEELING</u> : accepts and clarifies the feeling tone of the students in a non-threatening manner. Feelings may be positive or negative. Predicting or recalling feeling is included. 2. <u>PRAISES OR ENCOURAGES</u> : praises or encourages student action or behaviour. Jokes that release tension, but not at the expense of another individual; nodding head, or saying "um hm?" or, go on, are included. 3. <u>ACCEPTS OR USES IDEAS OF STUDENTS</u> : clarifying, building or developing ideas suggested by a student. As teacher brings more of his own ideas into play, shift to Category 5. 4. <u>ASKS QUESTIONS</u> : asking a question on content or procedure with the intent that a student can answer.
	DIRECT INFLUENCE	5. <u>LECTURING</u> : giving facts or opinions about content or procedures; expressing his own ideas, asking rhetorical questions. 6. <u>GIVING DIRECTIONS</u> : directions, commands, or orders, with which a student is expected to comply. 7. <u>CRITICIZING OR JUSTIFYING AUTHORITY</u> : statements intended to change student behaviour from nonacceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extreme self-reference.
	STUDENT TALK	8. <u>STUDENT TALK-RESPONSE</u> : talk by students in response to teacher. Teacher initiates the contact or solicits student statement. 9. <u>STUDENT TALK-INITIATION</u> : talk by students, which they initiate. If "calling on" student is only to indicate who may talk next, observer must decide whether student wanted to talk. If he did, use this category.
		10. <u>SILENCE OR CONFUSION</u> : pauses, short periods of silence, and periods of confusion in which communication cannot be understood by the observer.

Note: There is No scale implied by these numbers. Each number is classificatory; it designates a particular kind of communication event. To write these numbers down during observation is to enumerate - not to judge a position on a scale.

Procedure of Recording Observations

1. Orientation to Data Collection Staff

Looking to the vast field of exploration and the size of the sample, the Director, SIE, Udaipur decided to send a team of 11 persons instead of sending only the Chief Investigator and the Senior Research Fellow for collecting the information. A team of enthusiastic and dependable persons from and outside the SIE Udaipur was constituted and a rigorous eight days orientation programme was organised in the SIE from 10th to 17th March 1976. During the orientation programme, much emphasis was laid down on clarifying the concepts mentioned herein and to give the maximum opportunities of recording class-room behaviour of teachers in various schools of Udaipur city. For organising the programme, the expertise available in the Vidya Bhawan Govindram Seksaria Teachers College, Udaipur was made use of to providing training in FIACS technique of recording information.

2. Computation of Inter-Observer Reliability

Before setting out for recording observations in the field, it was decided to compute inter-observer reliability coefficients for each of the members of the team by using the Scott's formula for finding out coefficient of inter-observer

reliability:¹

$$\pi = \frac{p_o - p_e}{100 - p_e}, \text{ where}$$

$$p_o = 100 \sum_{i=1}^k b^2, \quad k \text{ represents categories}$$

$$p_e^2 \text{ represents proportion of tallies falling into each category.}$$

It was found that the reliability coefficients of all the members of the team ranged from .75 to .9. Only three out of eleven members were such whose coefficients fell below the desirable norm of .80. As such, it was advised that such members should have more practice of observing lessons and they would be allowed to take observations only when they acquire the desirable target of inter-observer's reliability coefficient to .80. Only on account of this reason, the process of data collection was delayed by a week or so.

3. Process of Recording Observations

After getting the members of the data collection team trained, the Director of the SIE, Udaipur asked the team to set out for data collection from the field. Each of the members of the team was asked to complete the work in the stipulated time. Each and every member was requested to take at least

1. N.K. Jangire, An Experiment in Teacher Education and Teacher Effectiveness. P. 36

two sets of observations for each teacher selected under the sample and to maintain the duration of each spell to 20 minutes for recording verbal interaction* of teachers in classroom situations.

As pointed out earlier, the process of recording information began on 25th March 1976 and concluded on the 15th May, 1976. During this period, 1187 observation sheets for FIACS were got filled in by the members of the data collection team. On scrutiny, only 1100 observation sheets @ 2 sheets for each teacher, were retained and the rests were discarded due to one reason or the other. The details about classwise and subject-wise observations (1100) taken by the data collection team in respect of classes (from ungraded unit to class VIII) and subjects (language, Maths, Gen.Science, Social Studies and others) have been shown in the following table:

* The process of recording observations as per technique of FIACS was taken as a gimmick of the Investigator, by some of the students as well as by the teachers selected under the sample. At one place, one of the students reacted to it by saying to his friend, "Naya Master has gone amuck. He was writing numbers at random and doing nothing else." The listener said in response to it, "Aaj kal ke master log Karte hi kya Hain. Kabhi kya to kabhi kya?"

TABLE NO. II

CLASS-WISE AND SUBJECT-WISE CLASSIFICATION OF OBSERVATIONS TAKEN BY THE DATA
COLLECTION TEAM UNDER FLACS

Sl. No.	Class	TRAINED TEACHERS N=363	UNTRAINED TEACHERS N = 187								GRAND TOTAL		
			Soc- ial Stu- dies	Sci- ence	Eng- lish	Hindi	Maths.	Total	Soc- ial Stu- dies	Sci- ence	Hindi	Maths.	Total
1. VIII	66	62	6	6	-	140	54	32	8	8	-	102	242
2. VII	34	28	20	20	-	112	32	20	6	14	4	76	188
3. IV	26	28	32	28	2	116	24	10	6	26	-	66	182
4. V	52	28	46	18	2	146	26	20	2	12	2	62	208
5. VI	20	22	46	6	2	96	4	4	6	6	2	22	118
6. VII	18	14	40	4	2	78	10	-	4	4	2	20	98
7. VIII	14	8	14	-	2	38	6	8	4	4	4	26	64
TOTAL	240	190	204	82	10	726	156	94	36	74	14	374	1100

It is clear from the above table that -

- (i) the maximum number (242) of lessons were observed in relation to the teaching of ungraded unit system of teaching in classes I and II combined.
- (ii) the minimum number (64) of lessons were observed regarding teaching of class VIII,
- (iii) by and large, the majority of the lessons (242+188+182+208) revolved round the classes from ungraded unit to class V,
- (iv) only 280 observation sheets were used in relation to classes VI to VIII, and
- (v) in relation to teaching of various subjects, language, science and mathematics occupied the top three positions as observed by members of the data collection team.

Since the STC trained teachers are supposed to teach primary classes in the field, the majority of the observations taken in relation to the teaching of primary classes were thought to be satisfactory for the purpose of this investigation.

Preparation of an Interaction Analysis Matrix

Having received information from all the quarters, it was attempted to prepare 10x10 matrix for getting more information about the different categories of behaviour patterns of the teachers.

The preparation of a matrix involved the following steps:

Supposing the coded information is -

4, 8, 8, 2, 5, 5, 5, 5, 4, 8, 3, 5, 5

Step 1. Beginning and closing the observations

Putting 10 at the beginning and at the end of the series of observations, if the recorders of the observation forgot to do so.

Step 2. Forming Pairs².

After the first step, the process of forming pairs began. The first observation was clipped with the second, the second was clipped with the third, the third with the fourth, and so on and so forth, till the end of the last observation. To make it more understandable, the pairs looked like:

10, 4, 8, 8, 2, 5, 5, 5, 5, 4, 8, 3, 5, 5, 5, 10

This operation was repeated for each and every observation recorded for each of the unit of the sample covered under the exploration.

Step 3. Tabulating Interaction Analysis Matrix.

The tabulation of the Interaction Analysis Matrix was done by a set method of tabulating the information. The first number of any of the pairs was designated the row and the second number the

2. ibid. P. 41

column. In this way all the 100 cells in 10x10 matrix had their specific positions in the matrix.

Having received 1100 observation sheets concurring all the 550 units of the sample, district-wise matrices were prepared by transposing the information into the proforma of which was prepared in advance. Thereafter, the range-wise matrices were prepared and finally, the overall super-matrix was prepared for working out state-level results of class-room behaviour of teachers. This procedure of preparing matrices was followed in the case of trained and untrained male and female teachers separately. The matrices thus prepared were inter-mingled according to need of the analysis of the data.

ANALYSIS OF DATA : THEORETICAL CONSIDERATIONS

Since the purpose of this investigation was to estimate the incidence of various types of behaviour patterns of trained and untrained, male and female teachers, the analysis was done by converting the column totals of concerned matrices into percentages. This was done by dividing the total of frequencies under each column by the matrix total and multiplying the residue by hundred.

After this operation, it was thought worthwhile to adopt two different modes of analysis, namely,

(1) to work out the percentages of the general behaviour patterns of teachers - trained and untrained, as per various categories of verbal behaviour in class-room situations, and (2) to work out the special aspects of teacher behaviour in class-room situations as per application of various formulae specified for the purpose.

The first mode of analysis was quite simple as it involved mere computation of percentages of various categories of verbal behaviour, such as, accepts feelings, praises or encourages, etc. (ten in all) whereas the second mode of analysis involved the use of specific formula to compute variables like, the Teacher Talk (T.T.), the Pupil talk (PT), the Silence or Confusion (SC) etc. (eleven in all). The formulae thus used for the purpose of working out these variables are described below alongwith their definitions³:

1. Teacher Talk: This is an index of a teacher as to what extent he speaks in the classroom. It is generally denoted by T.T.

$$T.T = \frac{(\text{Categories } 1+2+3+4+5+6+7)}{\text{Total of all categories}} \times 100$$

2. Pupil Talk: It is the index of pupils as to what extent they speak in the classroom. This is generally denoted by P.T.

3. ibid P. 43

$$PT = \frac{\text{Categories 8 + 9}}{\text{Total of all categories}} \times 100$$

3. Silence or confusion: This index gives an idea about the Silence or confusion prevailed in the classroom. It is abbreviated as SC.

$$SC = \frac{\text{Category}}{\text{Total of all categories}} \times 100$$

4. Teacher Response Ratio: This indicates the proportion of teacher response in the total of that part of his behaviour which includes an aggregate of response and initiation. The TRR is calculated by the formula.

$$TRR = \frac{\text{Categories 1+ 2 + 3}}{\text{Categories 1+2+3+6+7}} \times 100$$

5. Instantaneous Teacher Response Ratio: This ratio indicates the proportion of teacher response in the total of that part of his behaviour which includes an aggregate of response and initiation and which occurs immediately after the pupils have stopped talking. The TRR 89 is calculated by the formula:

$$TRR 89 = \frac{\text{Sum of the columns 1,2,3 of rows 8,9}}{\text{Sum of columns 1,2,3,6,7, of rows 8,9}} \times 100$$

6. Teacher Question Ratio : This indicates the proportion of questioning in the total of that part of teacher behaviour which includes an aggregate of questioning and lecturing. The TQR is calculated by the formula:

$$TQR = \frac{\text{Category 4}}{\text{Categories 4 + 5}} \times 100$$

7. Instantaneous Teacher Question Ratio: This indicates the proportion of questioning in the total of that part of teacher behaviour which includes an aggregate of questioning and lecturing and which occurs immediately after the pupils have stopped talking. The TQR 89 is obtained by the application of the formula:

$$TQR\ 89 = \frac{(\text{Sum of the cells } 8-4, 9-4)}{(\text{Sum of cells } 8-4, 8-5, 9-4, 9-5)} \times 100$$

8. Pupil Initiation Ratio: This ratio indicates the proportion of pupil initiation in total pupil talk. It is denoted by PIR and is calculated by the application of the formula -

$$PIR = \frac{\text{Category 9}}{\text{Category 8+9}} \times 100$$

9. Pupil Steady State Ratio: It is the ratio which indicates the proportion of sustained pupil talk in total pupil talk. This is abbreviated as PSSR and is obtained by the application of the formula:

$$PSSR = \frac{\text{Sum of cells } 8-8, 9-9}{\text{Total pupil talk (i.e. total of cats. 8 & 9)}} \times 100$$

10. Content cross Ratio: This indicates the proportion of purely content-oriented interaction in the total interaction. It is monikers as CCR and is calculated by the application of

the formula:

$$CCR = \frac{\text{Categories 4+5}}{\text{Total of all categories}} \times 100$$

11. Steady State Ratio: This ratio indicates the proportion of sustained behaviour patterns in the total interaction. It is represented by SSR and is calculated by the formula:

$$SSR = \frac{\text{Sum of Steady State Cells}}{\text{Matrix total}} \times 100$$

Sum of Steady State cells = Total 10 diagonal cells.

ANALYSIS OF DATA : PRACTICAL CONSIDERATIONS

Having finalised the theoretical aspects of analysis of data, it was attempted to work out the results of behaviour of teachers in classroom situations. For the sake of convenience, the results thus obtained through two modes of analyses will be presented one by one under two heads:

A. GENERAL FEATURES OF TRAINED AND UNTRAINED TEACHER BEHAVIOUR

General features of teacher behaviour were envisaged into finding out category-wise percentages of behaviours in view of the ten categories put forth by Ned A. Flanders⁴. These percentages were calculated separately for each of the strata of the sample and were compared with the percentages obtained

4. Ned A. Flanders, Analysing Teacher Behaviour, P.25

by Pareek and Rao⁵ and Verma and Ansari⁶. Wherever possible, the results obtained in this investigation were also compared with the results obtained by Ned. A. Flanders. The results are presented in Table No. III.

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5. Udal Pareek and T.V. Rao, Indian Educational Review, Pp. 55-70.
 6. M.R. Verma and M.H. Ansari, Indian Educational Review, Pp. 19-41

TABLE No. III
PERCENTAGES OF VARIOUS CATEGORIES OF VERBAL BEHAVIOUR OF TRAINED
AND UNTRAINED TEACHERS.

Category	Behaviour	PERCENTAGE				
		Rajasthani -ni Trad -ned Teachers N=363	Rajasthani and trained teachers N=187	Pareek Study Teachers N=40	Verma Ansari Study Teachers N=37	Rajasthani Trained & Untrained Teachers N=550
<u>TEACHERS</u>						
Category 1	Accepts feelings	.03	.05	.026	.00	.04
Category 2	Praises or encourages	2.88	2.06	1.97	0.82	2.63
Category 3	Accepts pupil ideas	1.79	1.26	2.57	4.37	1.62
Category 4	Asks questions	9.59	11.44	8.85	8.18	10.39
Category 5	Lectures	31.26	29.10	34.01	34.18	30.88
Category 6	Gives commands and directions	5.11	5.66	5.28	4.45	5.56
Category 7	Criticizes or justifies authority	1.18	1.01	1.77	1.75	1.14
<u>PUPILS</u>						
Category 8	Responds to teacher	14.07	18.38	17.79	24.02	15.98
Category 9	Pupil talk-initiation	1.68	3.01	13.05	1.63	2.19
Category 10	Silence or confusion	32.39	28.03	14.42	10.30*	31.89

* represents approx.imate value.

On the basis of the above table, the following inferences could be drawn:

1. It is quite evident that teachers in general whether trained or untrained have made use of the Category 1 which concerns acceptance of the feelings of pupils. Flanders⁷ reports that the incidence of this type of behaviour is on an average .05 percent. In view of this fact, the untrained teachers (.05) seem to have superiority over the trained teachers (.03). This seems to be a plus point of the untrained teachers of the State. Further, the incidence of this behaviour of teachers - trained and untrained (0.04) is also higher in comparison to what has been observed by Pareek and Rao⁸ or by Verma and Ansari⁹. This means that the teachers of Rajasthan are cognizant of this type of behaviour in their classroom situations which is a happy going.

7. Ned. A. Flanders, Op. Cit. p. 125

8. Pareek and Rao, Op. Cit. p. 60

9. Verma and Ansari, Op. Cit. p. 30

2. Category 2 concerns with praises or encourages. The trained teachers (2.88) seem to have superiority over the untrained teachers (2.06). Nearly 3 percent of the total time appears to have been utilised for the category 2 behaviour of the trained teachers whereas this percentage is 2 in the case of the untrained teachers. The teachers of Rajasthan (2.63) on the whole, whether trained or untrained, seem to have their superiority over the teachers as observed by Pareek and Rao¹ and by Verma and Ansari.²
 3. The trained teachers (1.79) appear to be slightly more careful regarding acceptance, clarification and development of pupil ideas (category 3) than the untrained teachers (1.26). This incidence of the behaviour of teachers of Rajasthan seems to be far from satisfactory in comparison to what has been observed by Pareek and Rao, and Verma and Ansari. However, so far as trained and untrained teachers are concerned, the trained teachers claim their superiority over the untrained ones.
 4. Putting questions to pupils consumes 9.59 per cent of the total time of trained teachers in their classroom whereas 11.44 per cent of the total time is consumed by the untrained teachers. It appears that the untrained teachers put more questions to
10. Buch and Senthilam, Communication in Classroom,
P. 127

the pupils in comparison to the trained teachers. In other words, the untrained teachers give more opportunity to pupils to express themselves before the class as compared to trained teachers. This situation may be on account of the experience of the untrained teachers included under the sample. The overall performance of the Rajasthani teachers seems to be dominating in respect of putting questions to pupils, in comparison to other teachers observed by other researchers mentioned above.

5. Lecturing in class-room appears to be more favourite of the trained teachers (31.24%) in comparison to the untrained teachers (29.05%). A little less than one-third of the total interaction time is devoted to lecturing by the Rajasthani teachers (30.88%). The untrained teachers seem to lay less emphasis on it in comparison to the trained teachers.
6. This category concerns with giving commands and directions to pupils. The untrained teachers seem to giving slightly more commands and directions in comparison to trained teachers. The comparative percentages denote a similarity of behaviour of the teachers in general. Out of every hundred interactional events, more than 5 events concern with giving commands or directions to the pupils.

7. The trained teachers (1.18) seem to use this category of behaviour, a slightly more in comparison to untrained teachers (1.01). This behaviour includes criticism and rejection of pupil ideas, justification of teacher authority and threats to pupils. The teachers in Rajasthan, in general, seem to use this category of behaviour very sparingly in comparison to what Pareek and Rao, and Verma and Ansari had observed in their investigations. The untrained teachers seem to be more conscious of this type of behaviour in comparison to other teachers.
8. Categories 8 and 9 are devoted to pupil talk. The pupils appear to be less participating in the class of trained teachers (15.75) whereas they seem to be more active in the class of untrained teachers (21.39). Incidentally, the behaviour of untrained teachers under these categories has more proximity to the norm expectation of Ned A. Flanders (20 per cent). It is also encouraging to note that 3 per cent of the total time of the pupil's talk in untrained teacher's classroom is utilised in self initiation, free comments, off-hand remarks, unpredictable answers and novel suggestions whereas only 1.68 percent time is used for such purposes in the class-room behaviour of trained teachers. This seems to be another patent quality of untrained teachers.

9. Nearly one-third of the total interaction time seems to have been used in silence or confusion by the trained teachers whereas this percentage arrives at 28.03 in the case of untrained teachers.

It is interesting to note that the categories 1 to 3 correspond to generating a permissive socio-emotional climate in the classroom which forms the basis of free expression and creative thinking. In the present context, the trained teachers were found to use these behaviour patterns to the extent of 4.70 per cent whereas the untrained teachers used them upto 3.37. This shows a clear-cut behavioural difference between trained and untrained teachers and that the former seem to affirm superiority to the latter.

The sum total of categories from 1 to 7 concern with teacher talk. If the entire chunk of teacher talk is taken into account, the trained (51.86) as well as untrained (50.58) seem to consume nearly half of the whole interactional time. Pareek and Rao found this time to be 54.48, Verma and Ansari worked out at 54.0 and Buch and Santhanam calculated at 69.¹¹ Flanders worked out this time at 68 per cent of the total time of classroom interaction.

11. ibid, P. 49

Apparently, from the values of the classroom interactional events, there does not seem to be a remarkable difference between the behaviour patterns of the two categories of teachers. It was, therefore, decided to test the significance between the two sets of percentages. For this purpose, the following formula was used¹²:

$$CR = \frac{(P_1 - P_2) - 0}{\sigma_D}$$

Where P_1 and P_2 are the two percentages and

$$\sigma_D = \sqrt{PQ \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}$$

$$\text{Where } P = \frac{P_1 N_1 + P_2 N_2}{N_1 + N_2}$$

$$\text{and } Q = 100 - P$$

N_1 and N_2 are the two numbers of which P_1 and P_2 are the respective percentages.

With the help of the above mentioned formula, the relative values of P and Q were worked out and the significance between the two category-wise percentages was tested. The values of CR. (Critical Ratio) thus obtained are as shown in Table No. IV.

12. Henry E. Garrett and R.S. Woodworth, Statistics in Psychology and Education, PP 235-236.

TABLE NO. IV

CATEGORY-WISE DIFFERENCE BETWEEN THE BEHAVIOUR OF TRAINED AND UNTRAINED
TEACHERS

Category	Trained Teachers N ₁ =363	Untrained Teachers N ₂ = 187	P	Q	C.R.	Sig./N.Sig.
Category 1.	.03	.05	0.04	99.96	.17	Non-Sig.
Category 2.	2.88	2.06	2.60	97.40	.18	Sig. (.01)
Category 3.	1.79	1.26	1.60	98.40	.42	Sig. (.01)
Category 4.	9.59	11.44	10.21	89.79	.57	Sig. (.01)
Category 5.	31.26	29.10	40.41	59.59	.34	Sig. (.01)
Category 6.	5.11	5.66	5.29	94.71	.48	Sig. (.01)
Category 7.	1.18	1.01	1.14	98.66	1028.63	Sig. (.01)
Category 8.	14.07	18.38	15.53	84.47	.14	Sig. (.01)
Category 9.	1.66	3.01	2.13	97.87	.35	Sig. (.01)
Category 10.	32.39	28.03	40.43	59.57	.34	Sig. (.01)

It is clear from the above table that there is a significant difference between the class-room behaviour of trained as well as untrained teacher in relation to all the categories from 2 to 10, excepting category No. 1 which is related to accepting the feeling of pupils in class-room. This means that neither the trained nor the untrained teachers are particular about the feelings of the pupils while handling class-room situations.

In relation to other categories viz., Praises or encourages, Accepts or Uses ideas of pupils, Asking questions, lecturing, Giving directions, Criticising or justifying authority, Pupils talk responses, Pupils talk initiative, and Silence or confusion, the trained teachers confirm their superiority over the untrained teachers. There is a significant difference (.01 level) between the performance of the two types of teachers. Thus the null hypothesis that there exists no significant difference between the class-room interaction of trained and untrained teachers in Rajasthan stands rejected.

B. SPECIAL ASPECTS OF TEACHER-PUPIL BEHAVIOUR

1. State Level Comparisons

Having worked out and discussed the general features of classroom behaviour of trained and

untrained teachers, it was attempted to work out the special aspects of teacher-pupil behaviour in terms of important ratios such as, Teacher talk (T.T.), Pupil Talk (P.T.) etc. The basic idea behind finding out all the eleven types of ratios was to see the basic difference between certain behaviour patterns of the trained and untrained male and female teachers of Rajasthan.

On the basis of the formulae given in the preceding section of this chapter, eleven ratios were worked out. Thereafter, in order to see the significance between the behaviour of two types of teachers, the Critical Ratio test was used for this purpose. The formula and the mode of calculation of C.R. have already been discussed earlier. The State-level results thus obtained are presented in the Table No. V.

TABLE No. V

STATE-LEVEL COMPARISON OF THE CLASS-ROOM BEHAVIOUR OF TRAINED AND
UNTRAINED TEACHERS

S. No.	Variable symbol	Trained Teachers N ₁ =363	Untrained Teachers N ₂ =187	Critical Ratio	Significant/Non-Significant
1.	T.T.	51.64	50.61	6.055	Significant (.01)
2.	P.R.	15.76	20.40	19.15	Significant (.01)
3.	S.C.	32.38	28.03	9.18	Significant (.01)
4.	T.R.R.	42.77	33.87	4.66	Significant (.01)
5.	T.Q.R.	40.23	28.27	6.40	Significant (.01)
6.	T.R.R.89	60.08	50.19	3.01	Significant (.01)
7.	T.Q.R.89	62.11	72.22	7.26	Significant (.01)
8.	P.I.R.	10.68	14.06	36.91	Significant (.01)
9.	P.S.S.R.	5.75	21.40	27.56	Significant (.01)
10.	C.C.R.	52.99	53.54	4.32	Significant (.01)
11.	S.S.R.	59.78	54.56	3.60	Significant (.01)

The following conclusions can be drawn on the basis of the above table:

1. All the behavioural variables of the trained teachers (male and female combined) differ significantly with the untrained teachers. This difference is so significant that there is only one in one hundred chances that the classroom behaviour of trained teachers may not differ otherwise in 99% chances they are bound to differ. This leads to the rejection of the hypothesis that there is no significant difference between the classroom behaviour of trained and untrained teachers.
2. There are six ratios viz., Teacher Talk (TT), Silence or confusion (SC), Teacher Response Ratio (TRR), Teacher Question Ratio (TQR), Instantaneous Teacher Question Ratio (TQR 89), Pupil Initiation Ratio (PIR), and Steady State Ratio (SSR) which are higher in magnitude in the case of trained teachers in comparison

to the ratios obtained for untrained teachers.

This further leads to the conclusion that :-

- (a) the trained teachers talk slightly more in class-room in comparison to the untrained teachers.
- (b) the silence or confusion is more in the classroom of trained teachers in comparison to the class of untrained teachers. This may be due to the fact that the untrained teachers, having 10 years experience, might have less authoritarian behaviour in comparison to the young trained teachers.
- (c) The values of TRR, TQR, and TQR 89 are much higher in comparison to the values obtained in the case of untrained teachers. This means that the questioning and the proportion of teacher response in the total of that of the teacher behaviour which occurs

immediately after the pupils have stopped talking, etc., are definitely more in the case of trained teachers in comparison to the untrained teachers.

- d) Regarding pupils talk, it is surprising to note that the value of P.T. (Pupils' talk) is more in the case of untrained teachers in comparison to trained teachers. This finding is in reverse order in comparison to the finding worked out by Jangira (1975)
- e) Similarly, the values related to TQR 89, P. S.S.R., C.C.R. are higher in the case of untrained teachers in comparison to trained teachers. This leads us to the conclusion that the untrained teachers are more prone to purely content-oriented interaction in comparison to the trained teachers. The sustained pupils talk and the teachers response after pupils have stopped talking are also more in the case of untrained teachers than in comparison to the trained teachers.

In order to make the distinction between trained and untrained teachers more clear it was decided to present all the eleven interactional variables in the bar graphs. In this attempt, the following distinction can be vividly seen between the interactional patterns of the two types of teachers:

*State-level comparison of the class-room behaviour
of TRAINED and UNTRAINED teachers.*

80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0

128

INDEX-
UNTRAINED. □
TRAINED. ■

T.T., P.T., S.C., T.R.R., T.Q.R., T.R.R., T.Q.R., P.I.R., P.S.S.R., C.C.R., S.S.R.
89

The above graph reveals the following facts:

1. Out of eleven ratios, six ratios are such as they reflect upon the superiority of trained teachers over their untrained counterparts. The ratios are : Teacher talk (TT), Silence or confusion (SC), Teacher response ratio (TRR), Teacher question ratio (TQR) Instantaneous Teacher response ratio (TRR 89) and Steady State Ratio (SSR)
2. Only one ratio i.e., the Content Cross Ratio (CCR) is exactly the same for trained or untrained teachers. This means that the interaction taking place in the classroom of either of the teachers is purely content-oriented.
3. Only three ratios i.e., Pupil talk (PT), Pupil Initiation Ratio (PIR) and Pupil Steady State Ratio (PSSR) are such as the untrained teachers claim their superiority over the trained teachers.

By and large, it is explicitly clear that the trained teachers have definite superiority over the untrained teachers.

After clearly identifying the distinction between the classroom verbal behaviour of trained and untrained teachers of Rajasthan, it was thought proper to compare the class-room profiles of trained or untrained teachers of Rajasthan with the

profiles-drawn by the other researchers in the field of class-room interaction. For this purpose, the results obtained by Buch and Santhanam (1971), Verma and Ansari (1975), and Ned A. Flanders (1970), were made the fundamental basis of comparisons. The basic idea behind presenting all the eleven ratios is intended to give an idea of the balance of teacher initiation and teacher response as also of pupil initiation. Thus, the results obtained by various researchers are as tabulated in the Table No. VI.

TABLE No. VI

COMPARATIVE STUDY OF THE TEACHER-PUPIL BEHAVIOUR OF RAJASTHANI TEACHER IN
RELATION TO THE FINDINGS OF OTHER STUDIES

S. No.	Variable.	Symbol	Untrained Teachers $N_2 = 187$	Trained Teachers $N_1 = 363$	Buch & Santha- nam (1971)	Vernam and Ansari (1975)	American Norm Flanders (1970)
1.	Teacher Talk	T.T.	50.61	51.84	69	54.00	68.00
2.	Pupil Talk	P.T.	20.40	15.76	25.65	25.60	20.00
3.	Silence and Confusion S.C.		26.03*	32.38*	12.60	20.50*	12.00
4.	Teacher Response Ratio T.R.R.		33.87	42.77	61.63	42.65	42.00
5.	Teacher Question Ratio T.Q.R.		28.27	40.23	19.75	22.76	26.00
6.	Instantaneous Tr. Response Ratio	T.R.R.	2.89	50.19	60.08	79.00	52.50
7.	Instantaneous Tr. Question Ratio	T.Q.R.	2.89	72.22	62.11	35.50	65.20
8.	Pupil Initiation Ratio P.I.R.		14.08	10.68	21.80	10.97	34.00
9.	Pupil Steady State Ratio	P.S.S.R.	21.40	50.75	Not available	43.80	40.00
10.	Content Cross Ratio	C.C.R.	53.54	52.99	46.50	51.40	55.00
11.	Steady State Ratio	S.S.R.	54.56	59.78	43.00	65.50	50.00

* Includes productive as well as non-productive silence.

On the basis of the above table, the following inferences can be drawn in respect of the classroom interaction of the profile of teacher in Rajasthan and other profiles prepared by other researchers:

1. The teacher of Rajasthan whether trained or untrained, has been observed to be taking nearly half of the total interaction time, the percentages being 51.84 and 50.61, while the Flanders, and Buch and Santhanam's norms are 68% and 69% respectively. Of course, the results of this investigation are somewhat closer to the results obtained by Verma and Ansari in their investigation.

2. The state of silence, whether productive or non-productive, is highest in the case of trained teachers (32.38%) than the untrained

teachers (28.03%) as well as in comparison to the norms putforth by Flanders (12.0), Verma and Ansari (20.50) and Buch and Santhanam (12.60).

On the contrary, the proportion of pupil talk in the case of trained teachers of Rajasthan is the lowest (15.76) in comparison to all the studies referred to above. This is of course, a negative point of the trained teachers of Rajasthan. This gives an idea of a suppressive atmosphere in the class-room.

3. The value of TRR (Teacher Response Ratio - 42.77) in this investigation is in close proximity to the Flanders (42.00) and Verma and Ansari (42.65). This means that the class-room behaviour of trained teachers in relation to teacher's response to pupils is as good as that of an American teacher. It is more than an indirect behaviour.
4. The TQR (Teacher Question Ratio) clearly indicates that the class-room interaction of a trained teacher often seems to be flooded by a set of questions in comparison to the other norms established by the celebrated researchers in the field of classroom interaction. The trained teachers seem to put on an average of 11.81 question after every $2\frac{1}{2}$ minutes of lecture.

5. One of the interesting aspects of teacher-pupil interaction involves a study of how a teacher reacts immediately after the pupils have stopped talking. In this investigation, it was found that out of the total tendency of following pupil talk by response behaviour or initiation behaviour, the trained teachers followed it 60.08 per cent of time (TRR 89) by response behaviour (Flanders - 60, very close proximity to it), and inversely, 39.92 per cent of time by initiation behaviour. Likewise, out of the total tendency to follow it by questioning or lecture, the trained teachers followed it 62.11 per cent of time (TQR 89) by questioning and 37.89 per cent of time by lecture. The TQR 89 ratio has proximity with the results obtained by Verma and Ansari (1975).
6. The PIR (Pupil Initiation Ratio) is the index of pupils' initiative. In this piece of research the PIR was found to be 10.68 (Verma & Ansari 10.97). It is really revealing to note that 89 per cent of the total pupil talk is utilised in response to pupil-teachers' questions or commands and is characterised by narrow answers or reading the text. On the contrary, Flanders expects this ratio to be 34.00 and Buch and Santhanam expect to be at 21.80.

That way untrained teachers of Rajasthan are slightly better than the trained teachers.

7. The content-cross ratio (C.C.R.) is a clear index of the type of a class-room interaction. In this piece of research, nearly 53 per cent of the total interaction in the classes of trained teachers was purely content oriented as against 55 per cent as report by Ned A. Flanders (1970).
8. The SSR (Steady State Ratio) clearly indicates that nearly 60 per cent of the total pupil talk was found to belong to steady state cells 8-8 and 9-9. This suggests that the shift of behaviour patterns from one category to another was very slow.
9. Like-wise, the value of PSSR (Pupil Steady State Ratio) indicates that the ratio in relation to the trained teachers (50.75) is quite in contrast to the untrained teachers (21.40). Moreover, it is close towards the norms established by Ned A. Flanders and Verma and Ansari.

Thus, after finding out the class-room interaction variables in relation to trained and untrained male and female teachers and after having compared the results with the established norms of class-room interaction, it was decided to work out the same ratios about two

other strata of the samples viz. State-level trained male vs. untrained male teachers and State-level trained female vs. untrained female teachers with a view to finding out whether there exists any difference between the class-room performance of sex-wise trained and untrained teachers. Thereafter, it was aimed at finding out the significance between the two types of ratios obtained on the two categories of teachers. In this operation, the results so obtained are as presented in Table VII.

TABLE NO. VII
 STATE LEVEL COMPARISON OF THE CLASSROOM BEHAVIOUR OF TRAINED AND UNTRAINED MALE AND
 FEMALE TEACHERS

S.	Vari-	'Trd.	'Untrd.	'C.R.	'Sig./'Level	'Trd.	'Untrd.	'C.R.	'Sig./'Level
NO.	'able	'Male	'Male	'non-	'non-	'Female'	'Female'	'N=99	'N=99
				'sig.'		'N=171			'sig.'
1.	T.T.	52.72	54.13	1.01	N.S.	xx	41.23	46.85	2.11
2.	P.T.	15.99	18.62	14.27	S.	.01	17.54	33.35	9.98
3.	S.C.	31.29	26.40	6.95	S.	.01	31.22	20.40	8.09
4.	P.R.R.	45.95	43.26	1.58	N.S.	xx	37.61	33.87	4.53
5.	P.Q.R.	25.02	21.79	9.79	S.	.01	27.67	37.90	6.34
6.	PBR-BR	67.37	56.57	4.68	S.	.01	56.16	52.60	1.54
7.	PPB-BR	72.01	73.64	8.11	S.	.01	64.57	74.86	6.47
8.	P.I.R.	10.00	15.29	9.01	S.	.01	9.40	13.05	20.13
9.	PSSR	5.30	6.95	9.60	S.	.01	6.87	9.25	25.08
10.	CCR	57.43	59.47	2.62	S.	.01	51.67	50.49	0.45
11.	SSR	57.67	62.00	2.71	S.	.01	58.88	51.97	2.02

The following inferences can be drawn from the above table:

1. It is clear from the above table that there is a significant difference between the classroom behaviour of trained and untrained male teachers. Out of the eleven ratios, the significant difference exists between nine ratios. This finding rejects the null hypothesis that there exists no significant difference between the class-room interaction of trained and untrained male teachers.
2. Similarly, in the case of trained and untrained female teachers, the significant difference exists in the case of seven ratios at the .01 level. The difference between two ratios i.e., Teacher Talk (TT) and Steady State Ratio (SSR) is significant at the 0.05 level of significance. This means that in

the case of female teachers, the difference between the trained and untrained teachers at two stages of behaviour is significant in 95 per cent cases whereas in the case of male teachers it is significant in all the nine stages of behaviours at the level of .01 level of significance, i.e. in 99 per cent cases.

3. In both the cases of comparison between trained and untrained teachers, there are only two ratios which are non-significant. In the case of male teachers, the ratios are - Teacher Talk (TT) and Teacher Response Ratio (TRR) whereas in the case of female teachers, the ratios are- Instantaneous Teacher Response Ratio (TRR 89) and Content Cross Ratio (CCR). The implications of all these ratios have already been made clear in the preceding section of this chapter. Hence no further exposition is needed here.

On the basis of the above findings, it can very well be concluded that the trained teachers whether male or female establish their superiority over untrained teachers particularly in relation to the class-room interaction patterns of behaviour.

2. Range Level Comparisons

Having compared the State-level class-room interaction variables regarding trained and untrained teachers, it was proposed to compare the class-room behaviour of range-level teachers. As pointed out earlier, when the data on this investigation was being collected, there were three educational ranges in the State, namely, the Jaipur-Ajmer Range, the Jodhpur-Bikaner Range, and the Udaipur-Kota Range. Therefore, for range-level comparison of trained and untrained male and female teachers, four possible strata of comparison were found to be useful for the purpose of this investigation. The strata are:

- a) Trained (Male & Female) vs. Untrained (M&F) Teachers
- b) Trained Male vs. Untrained Male Teachers
- c) Trained Female vs. Untrained Female Teachers
- d) Trained Male vs. Trained Female Teachers.

After working out all the range-wise eleven ratios for the above mentioned strata of the samples, it was decided to see the difference between the ratios statistically by the application of the Critical Ratio Test.

In this operation, the results so obtained in relation to the first strata of the sample viz. the trained (male and female) vs the untrained (male and female) teachers have been presented in the Table No. VIII.

TABLE NO. VIII
RANGE-WISE COMPARISON OF CLASSROOM BEHAVIOUR OF TRAINED & UNTRAINED TEACHERS

Sl. No.	'Varia'	JAIPUR AJMER RANGE			JODHPUR-BIKANER RANGE			UDALPUR-KOTA RANGE				
		'Trd.'	'Untrd.'	C.R.	'Sig./ 'Trd.'	'Untrd.'	C.R.	'Sig./ 'Trd.'	'Untrd.'	C.R.	'Sig./ 'Trd'	
1.	'ble	23.92	17.93	8.81	S(.01)	10.26	22.75	12.88	S(.01)	14.39	20.20	12.08 S(.01)
2.	'Trd.	30.77	30.21	5.33	S(.01)	33.83	24.78	5.18	S(.01)	25.63	24.11	7.58 S(.01)
3.	'T.S.	31.66	27.73	5.46	S(.01)	31.88	44.27	3.72	S(.01)	49.88	45.03	0.45 N.S.
4.	'T.R.R.	21.99	23.17	8.35	S(.01)	24.36	34.10	6.35	S(.01)	28.22	44.80	4.57 S(.01)
5.	'T.Q.R.	46.23	59.65	0.20	NS	56.90	48.43	1.11	NS	69.29	68.24	9.14 S(.01)
6.	TQR-89	48.89	61.17	0.34	NS	43.60	78.35	1.43	NS	73.74	76.30	7.87 S(.01)
7.	TQR-89	18.02	24.91	9.18	S(.01)	12.49	9.86	15.02	S(.01)	8.17	12.64	18.18 S(.01)
8.	P.I.R.	12.54	12.73	14.58	S(.01)	5.08	21.52	16.43	S(.01)	13.50	33.77	9.83 S(.01)
9.	PSSR	52.98	50.77	0.54	NS	51.48	59.22	0.99	NS	53.34	55.99	1.11 N.S
10.	C.C.R.	69.84	61.08	4.43	S(.01)	62.65	59.92	3.05	S(.01)	59.92	53.77	2.11 S(.05)

On the basis of the above table, the following inferences can be drawn:

1. Regarding Jaipur-Ajmer Range, out of the eleven ratios, the difference between 7 ratios are significant at the .01 level of significance and 4 ratios are non-significant.
2. In the case of Jodhpur-Bikaner Range, the same results have been obtained as worked out for Jaipur Ajmer Range. The same number and the same ratios are significant as well as non-significant.
3. In the case of Udaipur-Kota Range, 3 ratios (TT, TQR and CCR) were found to be non-significant and the rest 8 ratios significant- 7 ratios at 0.01 level and the only one ratio (SSR) at the .05 level of significance.

Regarding other three strata of the samples, the same type of results were worked out and tables were prepared. However, for the sake of drawing inferences from the three tables, the following exercise was regarded as useful:

TABLE NO. IX

CRITICAL APPRAISAL OF THE VANGE-WISE CLASS-ROOM INTERACTION RATIOS BETWEEN TRAINED AND UNTRAINED TEACHERS

Sl. No.	STRATA	Jaipur-Jhunjhunu Range			Jodhpur-Bikaner			Udaipur-Kota Range		
		Sig. (.01)	Sig. (.05)	Non-Sig.	Sig. (.01)	Sig. (.05)	Non-Sig.	Sig. (.01)	Sig. (.05)	Non-Sig.
1.	Trained Male Vs. Untrained Male teachers	5	1	5	9	1	1	10	-	1
2.	Trained Female Vs. Untrained Female Teachers	6	-	5	6	1	4	6	-	5
3.	Trained Male Vs. Trained Female Teachers	7	-	4	6	-	3	7	-	4
Total:		16	1	14	23	2	8	23	-	10

The above table reveals that out of 99 values of critical ratios computed to finding out the significant difference between the class-room interaction of range-wise trained and untrained teachers, 67 ratios were found to differ significantly (64 at .01 level of significance and 3 at .05 level) and the rest 32 ratios were found to be having no difference between the trained and untrained teachers. Therefore, by and large, it can be conveniently said that the trained teachers have definitely fared better in relation to class-room interaction rather than the untrained teachers. The basic reason is that two-third of the interaction traits of trained teachers differ significantly from the untrained teachers as convincingly put forth by this investigation.

CONCLUDING STATEMENT

In this chapter, it has been attempted to study the class-room behaviour of teachers using the technique of FIACS. In this effort, it was aimed at presenting the procedure of recording observations, mode of preparing interaction analysis matrix, analysis of data, and to presenting a comprehensive study of the class-room behaviour of trained and untrained male and female teachers. An effort was also made to view the results of this investigation vis-a-vis the results obtained by the

celebrated researchers in the field of class-room interaction. Finally, it was attempted to present the strata-wise discriminating aspects of class-room behaviour patterns of the trained and untrained teachers of the State as well as of the teachers of three educational ranges of educational administration of the State of Rajasthan. In the next chapter, it would be attempted to present an appraisal of teacher behaviour as seen through the traditional approach of observing lessons in class-room situations.

CHAPTER V

CLASSROOM BEHAVIOUR OF TEACHERS: TRADITIONAL APPROACH

'The relation between students and teachers is a crucial factor in the teaching process and must be considered an important aspect of methodology'

Objectives

Having seen the performance of trained and untrained teachers, applying a comparatively new technique of FIACS, it was decided to study the class-room behaviour of teachers through the traditional approach of supervising and examining practice teaching lessons of STCs students. The basic objective of this effort was to see whether there exists any difference in the opinion of the supervisors even if the traditional approach of studying class-room behaviour of trained and untrained teachers is pursued. Thus, the present chapter presents description of the construction of tool for studying class-room behaviour, its administration, its scoring and finally the comparative study of the behaviour of trained and untrained teachers of the State of Rajasthan. The entire chapter has been structured into the following major heads:

I. Construction of Observation Schedule.

II. Class-room Behaviour of Trained and Untrained Teachers.

III. Concluding Statement.

The details about each of the above mentioned heads are being given in the following sections of the report:

I. CONSTRUCTION OF OBSERVATION SCHEDULE

It is a well known fact that the traditional approach of observing lessons of student teachers repeats the off-beat points, like, the introduction, the development of lesson, the technique of questioning, the mastery over the content, use of teaching aids etc. Therefore, it was thought worth-while to give due place to all such points in the observation schedule to be prepared for this piece of investigation. The basic points followed for the purpose of preparing the observation schedule are mentioned below:

1. Preliminary Draft of the Schedule

In order to prepare the preliminary draft of the observation schedule, the personnel available in the State Institute of Education, Udaipur, were best mobilised for soliciting their opinion about various facets of lesson supervision. Out of the 12 Gazetted Officers of the SIE, 6 had the experience of teacher education ranging from 2 to 8 years. Therefore, 3 spells of meetings were arranged for a threadbare discussion of the varied aspects of class-room behaviour of teachers with a view to arriving at major aspects of class-room supervision.

and observation. Finally, it was decided to divide the Observation Schedule into eight major heads viz., Introduction of the lesson; Development of the lesson; Technique of questioning; Mastery over the content; Use of Teaching Aids; Personality of teacher and classroom climate; Evaluation of the lesson; and classroom Interaction. After this effort, the basic points to be kept in mind while observing the lessons of the teachers, were spelled out. At the end of this effort, a preliminary draft of the observation schedule was prepared for observing the classroom behaviour of teachers.

2. Opinion of Experts

After preparing the preliminary draft of the Observation Schedule, the draft was handed over to four experienced teacher educators including readers and lecturers of Vidya Bhawan Teachers Training College, Udaipur, and four teacher educators of STC Schools, for getting their opinion about the items included in the schedule. The basic objective behind this effort was to ascertain whether any of the important points were missing and to correct the minor flaws in the language of the items of the schedule.

3. Final Draft of the Schedule

In view of the constructive suggestions of the experts, the preliminary draft of the schedule was

revised and improved particularly in relation to the language ambiguities. A few items were also added to some of the aspects of the observation of teaching lessons by the teachers selected under the sample for the investigation. The final draft of the schedule thus prepared contained the following number of items under each of the major heads:

<u>Sl.No.</u>	<u>Aspect of observation</u>	<u>No. of Items.</u>
1.	Introduction to Lesson	2
2.	Development of the Lesson	7
3.	Technique of Questioning and Questions	7
4.	Mastery over the content	6
5.	Use of Teaching Aids	18
6.	Personality of the Teacher and Classroom climate	11
7.	Evaluation of the Lesson and Home assignment	8
8.	Teacher-Pupil Interaction	10
Total		<u>69</u>

The final draft of the schedule thus prepared was stencilled and cyclostyled. A copy of the draft has been appended vide Appendix - IV.

II. CLASSROOM BEHAVIOUR OF TRAINED & UNTRAINED TEACHERS

As pointed out in previous chapters, the process of data collection commenced from 25th March 1976 and concluded on the 15th May 1976. The observation of classroom behaviour of trained and untrained teachers was one of the facets of the entire process of data collection. The important pieces of information about observation of lessons, numerical weightage to different items for facilitating comparisons between the behaviour of trained and untrained teachers are given below:

1. Observation of Lessons

In order to collect data through this tool, it was decided to observe the teaching behaviour of the teacher concerned for one full period of his teaching and to record the observations in the Observation Schedule. Thus in all 550 lessons were observed. The details about the number of lessons of various classes and various subjects are presented in the following table:*

TABLE NO. ICLASS-WISE AND SUBJECT-WISE NUMBER OF LESSONS OBSERVED FOR THE INVESTIGATION

Class	Language	Maths	SOC. Studies	Science	Others	Total
U.U.	52	47	12	9	4	124
III	37	21	20	16	4	98
IV	29	29	19	14	2	93
V	36	26	15	18	2	97
VI	19	17	7	17	4	64
VII	9	7	6	13	3	38
VIII	11	6	3	8	3	31
IX	-	3	-	2	-	5
TOTAL:	193	156	82	97	22	550

It is evident from the above table that:

- (i) the number of lessons observed in relation to primary classes is 412;
- (ii) the number in the case of upper primary classes is 133, and
- (iii) the number of lessons observed in relation to secondary classes is only 5.

The basic idea behind organising preservice training programme is that the teachers concerned may meet the requirements of teaching classes upto Upper Primary stage of schooling. Thus, the number of lessons upto the Upper Primary stage arrives at 545, which is quite an appreciable number of lessons to be observed for this piece of investigation.

2. Numerical Weightage to Items

It is evident from the schedule that the opinion of the observer was solicited on a three

point scale, i.e., Absolutely done, Partially done and Not at all done by the unit of the sample, about each of the items of all the eight facets of observation. In order to quantify the opinions, it was decided to assign 3 credit points to 'Absolutely done', 2 points to 'Partially done' and 1 to 'Not at all done'. This way the scores on each of the facets were worked out and were subjected to statistical operations to find out the significant difference between the behaviour of trained and untrained male and female teachers included in the sample.

3. Comparison Between the Classroom Behaviour Trained and Untrained Teachers

After working out the aspect-wise scores on the observation schedule, it was decided to work out the

central tendencies of the scores. For making comparisons easy, it was aimed at finding out the critical ratios between the mean scores on each of the aspects of observation of the trained and untrained male and female teachers. Since the variables and the strata of the samples are large in number, it was thought worthwhile to present only the State-level comparisons in the main body of the report and the basic results in a composite form about the range level comparisons. The details of each of the aspects of comparison are as follows:

a) State-level Comparisons: In this effort, the same three strata of the samples viz., trained and untrained male teachers; trained and untrained female teachers; and trained and untrained male and female teachers, were made the fundamental basis of comparisons. The different values of mean, standard deviation, standard error of mean in relation to trained and untrained male teachers are presented in the following table:-

TABLE NO. II
CLASS-ROOM BEHAVIOUR OF TRAINED AND UNTRAINED MALE TEACHERS :

Sl. No.	Aspects of Observation	Trained Teachers(192)			Untrained Teachers(8P)			Criti- cal Ratio		Level N.Sig.
		Mean M_1	S.D. σ_1	S.E.m ₁	Mean M_2	S.D. σ_2	S.E.m ₂			
1.	Introduction	4.55	1.68	0.12	3.67	1.83	0.15	3.93	Sig.	.01
2.	Development of the lesson	7.87	2.32	0.17	6.59	1.87	0.20	4.56	Sig.	.01
3.	Technique of Questioning	10.40	3.10	0.22	9.01	3.48	0.37	3.33	Sig.	.01
4.	Mastery over the content	7.22	2.19	0.16	6.60	2.39	0.25	2.12	Sig.	.05
5.	Use of Teaching Aids	14.74	7.72	0.57	9.97	5.57	0.59	5.11	Sig.	.01
6.	Personality and class-room climate	13.55	4.05	0.29	11.16	4.05	0.43	4.49	Sig.	.01
7.	Evaluation of the lesson	8.45	4.23	0.30	8.20	3.94	0.42	0.47	Non-Sig.	-
8.	Class-room Inter-action	22.48	6.25	0.45	20.11	5.87	0.63	2.99	Sig.	.01

The above table points out that:-

1. The class-room behaviour of trained male teachers differs significantly from the classroom behaviour of untrained teachers particularly in relation to the introduction of Lesson, the development of Lesson, the technique of questioning, use of teaching aids, personality and class-room climate, class-room interaction, and mastery over the subject. Since the statistical means, and standard deviations on the scores of trained teachers are comparatively larger than the same values on the scores of untrained teachers, it can very well be concluded that the trained male teachers are definitely superior to untrained male teachers of the State. In other words, the pre-service teacher training programme has a definite bearing on the personnel who undergo professional training for teaching in classroom. Further, the null hypothesis that there is no significant different between the classroom behaviour of trained male and untrained male teachers stands rejected.
2. So far as the evaluation of the lesson is concerned, the untrained male teachers seem to be as good as the trained male teachers. There is no significant difference between the classroom behaviour in relation to the evaluation of lesson by the two categories of teachers.

3. Out of the eight critical ratios, six ratios are significant at the .01 level of significance, one at the 0.05 level of significance, and only one ratio is non-significant. Thus, it can be emphatically stated that the trained male teachers are definitely superior to untrained male teachers particularly in relation to classroom behaviour of teachers.

Regarding trained and untrained female teachers, the same procedure of working out different statistics was repeated. The various results are presented in the following table:-

TABLE NO. III

CLASS-ROOM BEHAVIOUR OF TRAINED AND UNTRAINED FEMALE TEACHERS

Sl. No.	Aspects of Observation	Trained Teachers(191)			Untrained Teachers(99)			Criti cal N.Sig.	Sig./ Level
		Mean M_1	S.D. $S.E.m_1$ σ_1	Mean M_2	S.D. $S.E.m_2$ σ_2				
1.	Introduction	4.43	1.72	0.13	3.67	1.79	0.18	3.40	Sig. .01
2.	Development of the Lesson	7.29	2.31	0.18	6.59	2.23	0.22	2.43	Sig. .05
3.	Technique of Questioning	9.25	3.46	0.26	9.23	3.42	0.34	0.04	N.Sig. -
4.	Mastery over the content	7.01	2.39	0.18	6.74	2.70	0.27	0.87	N.Sig. -
5.	Use of Teaching Aids	12.67	6.85	0.52	10.65	7.38	0.74	2.26	Sig. .05
6.	Personality and class-room climate	11.96	4.39	0.34	11.95	3.94	0.40	0.03	N.Sig. -
7.	Evaluation of the lesson	8.92	3.97	0.29	7.65	5.05	0.51	2.34	Sig. .05
8.	Class room Inter-action	21.73	6.55	0.50	21.28	6.58	0.66	0.54	N.Sig. -

The above table reveals the following facts:-

1. The trained female teachers are superior to untrained female teachers in relation to introducing the lessons to pupils, developing the lesson in the classroom, using teaching aids and evaluation of the lesson. One of the critical ratios is significant at the 0.01 level of significance, and the rest three ratios are significant at the 0.05 level of significance.
2. The observers recorded that there is no significant difference between the behaviour of two categories of female teachers in relation to technique of questioning, mastery over the subject, personality, classroom climate, and classroom interaction. Thus, it can be concluded that the trained female teachers are at par with the untrained female teachers.

3. Out of the eight critical ratios, four ratios are significant at either of the levels of significance and four are non-significant. Thus, no conclusive result can be drawn on the basis of these results in relation to the trained and untrained female teachers.

After comparing the classroom behaviour of the trained and untrained male and female teachers separately, it was decided to compare the classroom behaviour of trained and untrained teachers on the whole, irrespective of their sexes. Thus the values of mean, standard deviation, and standard error of measurement so obtained in the case of trained and untrained male and female teachers are as presented in the following table:-

TABLE NO. IV

CLASS-ROOM BEHAVIOUR OF OVERALL TRAINED AND UNTRAINED TEACHERS

Sl. No.	Aspects of Observation	Trained Teachers(363)			Untrained Teachers(187)			Criti cal Ratio	Sig. N.Sig.	Level
		Mean M_1	S.D. σ_1	S.E.m ₁	Mean M_2	S.D. σ_2	S.E.m ₂			
1.	Introduction	4.49	1.70	0.39	3.67	1.80	0.13	5.22	sig.	.01
2.	Development of the lesson	7.60	2.33	0.12	6.60	2.06	0.15	4.99	sig.	.01
3.	Technique of Questioning	9.86	3.32	0.17	9.13	3.44	0.25	2.41	sig.	.05
4.	Mastery over the content	7.12	2.28	0.12	6.67	2.55	0.13	2.09	sig.	.05
5.	Use of Teaching Aids	15.77	7.50	0.39	10.33	6.58	0.48	5.30	sig.	.01
6.	Personality and class-room climate	12.80	4.28	0.22	11.60	4.00	0.29	3.25	sig.	.01
7.	Evaluation of the lesson	8.67	4.03	0.21	7.91	4.56	0.33	2.01	sig.	.05
8.	Class room Interaction	22.13	6.40	0.34	20.73	6.27	0.46	2.44	sig.	.05

The above table reveals that the trained teachers have established their superiority over the untrained teachers in all the aspects of observations of classroom behaviour of teachers. Out of the eight aspects of classroom behaviour of teachers, four aspects differ significantly at 0.01 level of significance and the rest four at the 0.05 level of significance. Thus, it can be conclusively said that the preservice training programme has a definite bearing on the classroom behaviour of teachers. The null hypothesis that there is no significant difference between the classroom behaviour of trained and untrained male and female teachers stands rejected.

b) Range-Level Comparisons

As pointed out earlier, the strata of comparisons at range level would have been many, it was thought worthwhile to putforth only those results which reflect on the classroom behaviour of trained and untrained male and female teachers combined. For the sake of convenience, it has been attempted to present a critical appraisal of the net results depicting significant and non-significant classroom behaviour of trained and untrained male and female teachers. This effort is likely to reflect upon sum total impression of the observers, about the class-room behaviour of

TABLE NO. V.

RANGE-WISE RESULTS ABOUT THE CLASSROOM BEHAVIOUR OF TRAINED AND UNTRAINED MALE AND FEMALE TEACHERS

Sl. No.	'Aspects of Observation'	'Jainur-Aimer Range'	'Jodhpur-Bikaner Range'	'Udaipur Kota Range'
1.	'Sig. (.01)'; 'Non-sig. (.05)'.			
2. Development of the lesson	X X	✓	X X	✓ ✓
3. Technique of Questioning	X X	✓	X X	✓
4. Mastery over the content	X X	✓	X X	✓
5. Use of Teaching aids	X ✓	X X	✓ X	✓ X
6. Personality and class room climate	✓ X	X X	X X	✓ X X
7. Evaluation of the Lesson	X X	✓	X X	✓ X X
8. Class-room Interaction	✓ X	X X	X X	✓ X
TOTAL	3 1	4 2	1 7	3 1 4

The above table reflects the following facts:

1. Regarding Jaipur-Ajmer Range of administration, four critical ratios are significant (3 at .01 level and one at .05 level) and four ratios are non-significant.
2. In the case of Jodhpur-Bikaner Range, seven ratios are non-significant and only one ratio is significant at the .05 level of significance.
3. In the third Range, i.e., Udaipur-Kota Range, the situation of Jaipur-Ajmer Range repeats as it is. Four ratios are significant (3 at .01 level and 1 at .05 level) and the rest four ratios are non-significant.

By and large, there does not seem to be a clear-cut trend in the class-room behaviour of trained and untrained male and female teachers when range level comparisons are made. As such, it is difficult to state anything in positive terms so far as the range level analysis of the class-room behaviour of trained and untrained teachers is concerned.

III. CONCLUDING STATEMENT

In this chapter, it has been attempted to present a panorama of the impression gathered by the observers of the classroom behaviour of trained

and untrained teachers. By and large, it has revealed the fact that the trained teachers are by no means worse off, in their classroom behaviour than the untrained teachers. In fact, they are better. They have established their superiority over the untrained teachers in relation to the classroom behaviour, even if judged from the traditional pattern of observation of classroom teaching. The next chapter, will be devoted to presenting a panoramic view of the supervisors about the behaviour patterns of the trained and untrained teachers of the State.

CHAPTER - VI

PERCEPTION OF SUPERVISORS : A VIEW POINT

'The ability of a teacher to behave in specified ways within a social situation in order to produce empirically demonstrated effects approved by those in the environment in which he functions'

Bruce J. Biddle

The main purpose of this chapter is to present the perceptions of the supervisors , namely, the headmasters, the Sub-deputy Inspectors/Education Extension Officers, of the trained and untrained teachers working under them. This also purports to know whether the supervisory staff finds any difference in the working and role-playing of trained and untrained teachers. Therefore, in this chapter, it has been attempted to present the description about the development of the tool for perceptory assessment, and the distinction about the behaviour of the two types of teachers as perceived by the supervisory staff of the different areas of Rajasthan.

TOOL FOR THE ASSESSMENT OF PERCEPTION

Developing a tool for the assessment of perception of supervisors was a problem to the investigators. The basic reason was that the dimensions

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included in the supervisor's role are many in number and the tool constructors were required to profess psychological perfection and statistical refinement for the development of such a tool. Usually, the supervisors come across the teaching-learning situations, mastery over the subject content, Personality traits viz., punctuality, feeling responsibility, cooperative behaviour, moral character, etc., of the teachers teaching in their schools. Moreover, the supervisors also have an eye over the organisational capabilities of certain activities such as, games, examination work, library work and other co-curricular activities, of the trained and untrained teachers working in schools. Therefore, it was thought worthwhile to prepare an interview schedule for the assessment of the perception of supervisors. Although the term perception has a comprehensive meaning, yet the view-point expressed by Sh. J.P. Chaplin was kept in view. According to him "an intuitive awareness of truth or immediate belief about something"¹. Similarly, according to A.S.Hornby, 'perception is the process by which we become aware of changes through the senses of sight, hearing etc.'² Keeping these two meanings in mind, it was attempted to evolve the schedule for the assessment

1. J.P. Chaplin, Dictionary of Psychology. P. 351

2. A.S. Hornby, E.V. Gatenby and H.Wakefield, The Advanced Learner's Dictionary of Current English p.720.

of perception of supervisors of their teachers. The basic steps involved in the process of development of the tool are as follows:

1. Opinion of the Experts

As pointed out earlier, there was no tool readily available for this purpose. The greatest difficulty was to decide about the weightage to be given to different aspects of the activities performed by a teacher in school situations.

This difficulty was overcome by soliciting the opinion of the experts available in the SIE and in the nearby Shikshak Prashikshan Vidyalayas of Udaipur city. In all, 15 (10 officers of the SIE and 5 instructors of SPVs) experts were contacted in this respect and they were requested to express their opinion on the major heads they proposed to include in the Interview Schedule and also the relative weightage (in percentage) they proposed to assign to each of the heads. The major heads which emerged on the basis of the opinion of the experts are as follows:

- I. Class-room Teaching
- II. Organisation of co-curricular activities
- III. Personal Qualities of the Teacher

2. Weightage to Three Aspects of Perception

After deciding about the major aspects of the supervisors' perception about the work being done by their associates in schools, the mean percentage of the weightage assigned to each of the aspects were worked out. Thereafter, the means so obtained were subjected to the same statistical treatment which was given to the opinion of experts while developing the questionnaire-cum-test paper. The basic objective of this attempt was to ascertain the level of confidence expressed by the experts. The formula which was used for computing SE_m is $\sigma / \sqrt{(N-1)}$ because the sample size was less than 30.³ The various means, standard deviations, standard errors and the fiduciary limits are as shown in the Table No. I.

3. Henry E. Garrett and R.S. Woodworth, Statistics in Psychology and Education, P. 184.

TABLE NO. I

CONFIDENCE INTERVAL FOR THE APPLICATION
ASPECTS OF THE TRAINING PROGRAMME AS
PERCEIVED BY THE EXPERTS

Sl. No.	Aspects	Mean Weigh- tage M	Standard Deviation S.D.	Standard Error of Mean SE_m	Fiduciary Limits $M \pm 1.96 SE_m$
1.	Class-room Teaching	40	8.2	2.19	44.29 & 39.71
2.	Co-curricular Activities	30	7.5	2.00	33.92 & 26.08
3.	Personal qualities	30	6.4	1.71	33.35 & 26.65

N.B. Number of experts who expressed their
opinion : N = 15

It is evident from the above table that the values of Standard Error of Mean is greater than 1 in all the three cases, which means that the experts had a large variance in their opinion. However, the values of Mean percentages for all the three aspects were regarded as quite acceptable for the purpose of preparing the tool. The fiduciary limits express the state of affairs in which the mean value of the obtained percentages may go beyond the specified limits, only once in one hundred chances.

3. Draft of the Interview Schedule

Having ascertained the weightage to be given to major aspects of the opinion of supervisors, the various items were framed of each of the aspects of the schedule. In all, it was decided to divide the schedule into six major parts:

Part A: This part was specified for recording identifying information about the supervisors, Interviewer and the teacher about whom interview was to be taken.

Part B: This part concerned with the general information about the number of times the supervisors supervise lessons in one session. Their mode of checking up daily diaries, difficulties faced during supervision, their viewpoint about the use of teaching aids etc.

Parts C to E: These three parts were mainly concerned with the three basic aspects of the supervisor's perception viz. the class-room teaching, organisation of co-curricular activities, and personal qualities of the teacher.

In order to get the opinion of supervisors in clearer terms, it was decided to get their opinion on a five point scale on each of the items of the three major parts (from C to E) of the schedule. The five point

scale included : Extremely useful, very useful, useful, not useful and not at all useful. The interviewers were specifically instructed to record the opinion of the supervisors on this scale so that the uniformity in recording the opinion may be maintained, and it may be easier for the investigators to quantify the opinion at a later stage of analysis of the information.

Part F: This part was devoted to get the overall opinion of the supervisors about the performance of the trained or untrained teachers working in schools. At the time of analysis, it was decided to drop this overall view-point, because, in some of the cases, it was noticed that the opinion expressed by the supervisors in above mentioned parts contradicted the overall impression expressed by them at the end of the interview. In the process of analysis, only parts through C to E were regarded useful and sufficient for the purpose of getting supervisors' perception.

4. Try-out and Final Form of the Schedule

The preliminary draft was tried out on five supervisors with a view to improving upon the draft. This effort helped in ~~eliminating language ambiguities in~~ the schedule. A copy of the final form of the schedule has been appended vide Appendix V.

SUPERVISOR'S PERCEPTION ABOUT TRAINED AND UNTRAINED
TEACHERS

Since the population under this piece of research was very vast and scattered, therefore, the members of the data collection team were given clear instructions as to select such institutions where, as far as possible, both the type of teachers were available. Thus, in all, 117 supervisors* were contacted and were requested to solicit their opinion about the 550 teachers - trained and untrained, working under them.

On analysing the range of experience of the supervisors as well as in terms of their age, the following distribution emerged:

<u>Age (yrs.)</u>	<u>No.of supervisors</u>	<u>Experience (yrs)</u>	<u>No.of supervisors</u>
28 - 32	15	9 - 13	13
33 - 37	32	14 - 18	38
38 - 42	36	19 - 23	32
43 - 47	25	24 - 28	29
48 - 53	9	29 - 33	5
	—		—
N =	117	N =	117
	—		—

* Some of the supervisors (nearly 3 %) also expressed view that the collection of information about the trained and untrained teachers of Rajasthan, was not for the purpose of research but for retiring incapable teachers working in the department. One of the supervisors commented, "Research in this context- an eye wash. It is a sophisticated device to retire poor teachers".

The above mentioned facts are self-explanatory and they do not need any further exposition. .

The entire information relating to other parts viz. C to E, was quantified by assigning credit points from 5 to 1, such as 5 credit points to extremely useful and 1 credit point to not at all useful. The overall scores thus obtained were used in comparing the behaviour of trained and untrained teachers as perceived by their supervisors. The details about each of the aspects of comparison are as follows:-

1. Distribution of the Scores

After obtaining the overall scores of the teachers on the schedule, the various measures of Central tendency were worked out for different strata of the sample. The statistical figures thus obtained are shown in the following table:

TABLE No. III

MEASURES OF CENTRAL TENDENCY AND VARIABILITY OF THE SCORES ON INTERVIEW
SCHEDULE

Sl. No.	Various Statistics	Overall Sample	Trained Teachers	Untrained Teachers	Male Teachers		Female Teachers	
					Trd. Trs.	Untrd. Trs.	Trd. Trs.	Untrd. Trs.
1.	N	550	363	187	192	88	171	99
2.	Mean	86.30	91.32	82.41	94.10	84.21	88.22	80.81
3.	Median	86.00	88.58	79.93	91.28	81.68	85.57	76.38
4.	Mode	88.00	91.00	82.08	93.72	83.87	87.86	80.48
5.	S. D.	19.44	22.09	18.13	20.70	18.52	19.40	17.78
6.	Skewness	0.354	0.372	0.410	0.408	0.409	0.409	0.410
7.	Kurtosis	0.321	0.331	0.299	0.341	0.305	0.320	0.293

The following inferences can be drawn from the above table:

1. The values of Mean, Median, and Mode are nearer to each other in respect of each of the strata of the sample. Although the values of the central tendency are not exactly identical, it could be said that they are nearer to each other.
2. The values of skewness in all the cases move around the figure 0.4 which means that the curve obtained through this set of data is moderately positively skewed, but not very much skewed. This also shows some divergence in the opinion of supervisors who actually expressed their perception about trained and untrained teachers.
3. The values of Kurtosis are higher than .263 which means that all the distributions are platykurtic rather than leptokurtic.
On the basis of the above mentioned figures, it could be said that the central tendencies of the distributions are not exactly normal but they are

nearing normal. The distributions are slightly positively skewed and are not exactly mesokurtic.

2. Homogeneity of the samples:

The Hartley's test of homogeneity was also applied in the case of the scores obtained on the schedule. The objective behind this effort was the same as to ascertain whether the sample under reference was homogeneous or heterogeneous. For comparisons, the same three strata viz. the trained and untrained male teachers, the trained and untrained female teachers, and the trained and untrained male and female teachers were used. The Hartley's F-ratios as worked out for this purpose are presented in the Table No. III.

TABLE NO. III

HARTLEY'S TEST OF HOMOGENEITY OF THE TRAINED AND UNTRAINED MALE AND FEMALE TEACHERS

ON THE SCORES ON INTERVIEW SCHEDULE

Level of Analysis	σ^2_{max}	σ^2_{min}	$\frac{\sigma^2_{\text{max}}}{\sigma^2_{\text{min}}}$	F max	n max	K	Hartley's Critical F-ratio	Homogeneous/Heterogeneous Critical F-ratio
Trd. & Untrd. Male Trs. (N ₁ = 192 N ₂ = 88)	428.49	342.99	1.24	1.24	192	2	1.00	Heterogeneous
Trd. and Untrd. Female Teachers (N ₁ = 171, N ₂ = 99)	376.36	316.12	1.19	1.19	171	2	1.00	Heterogeneous
Overall Trd. & Untrd. Male & Female Trs. (N ₁ = 363, N ₂ = 187)	487.96	328.69	1.48	1.48	363	2	1.00	Heterogeneous

It is clear from the above mentioned values of F_{max} that none of values fall in the critical region of Hartley and, therefore, the samples under reference are heterogeneous rather than homogeneous. Thus, the null hypothesis

$$\sigma_1^2 = \sigma_2^2 = \sigma_3^2 = \dots = \sigma_n^2 = \sigma^2$$

stands rejected and the findings on this aspect of the effectiveness of trained and untrained teachers could be easily relied upon as the samples selected for the purpose form a conglomeration of heterogeneous units rather than of the homogeneous units.

3. Supervisors Perception of Trained and untrained Teachers

In order to study the supervisors perception of the role performed by the trained and untrained teachers working in their schools, the results about the same strata of the samples used earlier, were regarded as sufficient and proper basis for comparisons. The basic statistics for comparing the view-point of supervisors on the basis of critical ratios, have been presented in the table No. IV:

COMPARATIVE STUDY OF THE PERCEPTION OF SUPERVISORS ABOUT THE TRAINED AND UNTRAINED MALE TEACHERS.

Category S. of Teach No.	Aspects of Opinion	Trained Teachers			Untrained Teachers			Criti Sig/ -cal N.Sig. Level		
		N ₁	M ₁	S.D. σ_1	N ₂	Mean	S.D. σ_2	M ₂	S.E. σ_2	m ₂
Trained Male Vs. Untrained Male Teachers.	1. Classroom teaching	192	39.81	9.48	0.68	88	38.37	10.57	1.13	N.S. -
	2. Co-curricular activities	192	22.16	9.88	0.71	88	16.12	7.94	0.85	S. (.01)
	3. Personal Qualities	192	32.16	6.86	0.49	88	29.70	7.60	0.81	2.68 S. (.01)
Trained Female Vs. Untrained Female Teachers.	1. Classroom Teaching	171	39.88	9.55	0.73	99	36.83	8.35	0.84	2.65 S (.01)
	2. Co-curricular activities	171	17.78	10.87	0.83	99	16.00	8.34	0.84	1.41 N.S. -
	3. Personal Qualities	171	30.56	7.12	0.55	99	27.98	5.93	0.60	3.05 S. (.01)
Trained Male and Female Vs. Untrained Male and Female Teachers.	1. Classroom Teaching	363	39.84	9.49	0.50	167	37.56	9.47	0.69	2.68 S. (.01)
	2. Co-curricular activities	363	20.10	10.57	0.55	187	16.06	8.13	0.59	4.57 S. (.01)
	3. Personal Qualities	363	31.40	7.02	0.37	187	28.79	6.80	0.50	4.18 S. (.01)

The following conclusions can be drawn from the results mentioned in the above table:

(a) Trained Male vs Untrained Male Teachers

- (i) There is a significant difference between the behaviour of trained and untrained male teachers regarding organisation of co-curricular activities in schools. The trained teachers can thereby claim their superiority (.01 level) over the untrained teachers.
- (ii) The trained male teachers also have an edge over the untrained teachers in relation to personal qualities such as, discipline, punctuality, mental alertness, feeling responsibility etc. The supervisors hold the opinion that the trained teachers seem to be 99 per cent better than the untrained teachers.
- (iii) In the eyes of supervisors, the trained and untrained male teachers are at par so far as the aspect of class-room teaching and personal qualities of teachers are concerned.

(b) Trained Females vs Untrained Female Teachers

- (i) The trained female teachers have been considered superior to untrained female teachers in respect of class-room teaching and personal qualities. The difference being significant at the 0.01 level of significance.

(ii) Regarding organisation of co-curricular activities the supervisors regard both the category of teachers at par.

(c) Trained and Untrained Male and Female Teachers

In the eyes of supervisors, the trained and untrained male and female teachers have established their superiority over the untrained male and female teachers in all respects, such as, class-room teaching, organisation of co-curricular activities and the personal qualities.

Thus, it can be confidently said that the supervisory staff of the schools also regard trained teachers - male or female, superior to untrained teachers.

Range Level Comparisons

Having made the State Level Comparisons of the view-point of supervisors about the trained and untrained teachers, it was decided to make the range level comparisons. The basic statistics about it have been presented in the following table:-

TABLE NO. V

COMPARISON BETWEEN THE TRAINED AND UNTRAINED MALE AND FEMALE TEACHERS OF VARIOUS RANGES OF THE STATE

Range	Aspects of Trained Teachers	Untrained Teachers				Critical Ratio	Sig.	N. Sig. Level			
		N ₁	M ₁	S.D. ₁	S.E. ₁	N ₂	Mean	S.D. ₂	S.E. ₂		
Classroom Teaching	124 36.19	7.29	0.65	58	35.98	8.03	1.06	0.18	N.S.	-	
Co-curri- cular Ac- tivities	124 24.10	8.83	0.79	58	19.98	8.44	1.11	2.97	S.	(.01)	
Personal Qualities	124 29.80	6.49	0.58	58	26.07	6.26	0.82	3.65	S.	(.01)	
Classroom Teaching	133 41.32	9.48	0.82	65	39.12	10.53	1.31	1.48	N.S.	-	
Co-curri- cular Ac- tivities	133 18.76	11.31	0.98	65	15.59	8.84	1.10	1.98	S.	(.05)	
Personal Qualities	133 32.00	6.22	0.54	65	30.55	7.55	0.94	1.43	N.S.	-	
Classroom Teaching	106 42.26	10.56	1.03	64	37.39	9.41	1.18	3.03	S.	(.01)	
Co-curri- cular Ac- tivities	106 17.09	10.16	0.99	64	12.95	5.24	0.66	3.00	S.	(.01)	
Personal Qualities	106 32.54	6.19	0.80	64	29.47	5.73	0.72	2.63	S.	(.01)	

The above table clarifies that :

1. In the opinion of the supervisors of Jaipur-Ajmer range, the trained male and female teachers are definitely superior to the untrained male and female teachers.
2. The supervisors of Jodhpur-Bikaner range held the view that excepting class-room teaching, the trained male and female teachers are definitely superior to untrained male and female teachers.
3. The supervisors of Udaipur-Kota range of educational administration are of the opinion that excepting the aspect of organising co-curricular activities in schools, the trained teachers are no better than the untrained teachers.

Thus, from the point of view of supervisors, the trained teachers are, by and large, superior to untrained male and female teachers.

After this effort, it was further decided to see the supervisors opinion, range-wise, in relation to trained and untrained male and female teachers separately. The calculations made in this respect and the corresponding results as obtained are being presented in the following tables:

TABLE NO. VI

SUPERVISORS PERCEPTION ABOUT THE TRAINED AND UNTRAINED MALE AND FEMALE TEACHERS
OF VARIOUS RANGES

Category Range of Teachers	Opinion	Trained Teachers			Untrained Teachers			Critical ratio	Sig/ Le- vel Sig.			
		N ₁	M ₁	S.D. σ ₁	N ₂	M ₂	S.E. σ ₂					
Trained and Un- trained Male Teachers	Opinion	Classroom Teaching	52	44.44	9.47	1.31	24	38.87	11.38	2.32	2.23	S. (.05)
		Co-curri- cular Ac- tivities	52	22.17	10.91	1.51	24	12.79	6.47	1.33	3.89	S. (.05)
		Personal Qualities	52	33.96	8.15	1.13	24	31.58	6.42	1.37	1.26	N.S.-
Trained and Un- trained Female Teachers	Opinion	Classroom Teaching	54	40.15	11.18	1.52	40	36.50	8.04	1.27	1.75	N.S.-
		Co-curri- cular Ac- tivities	54	12.20	6.33	0.86	40	13.10	4.41	0.70	0.77	N.S.-
		Personal Qualities	54	31.17	8.06	1.10	40	28.20	4.93	0.78	2.06	S. (.05)
Trained and Un- trained Male Teachers	Opinion	Classroom Teaching	68	35.66	6.79	0.82	35	33.40	6.40	1.06	1.63	N.S.-
		Co-curri- cular Ac- tivities	68	23.06	6.98	0.65	35	16.74	6.53	1.10	4.44	S. (.01)
		Personal Qualities	68	30.43	6.86	0.83	35	24.94	6.18	1.04	3.97	S. (.01)

TABLE No. VI (contd.)

SUPERVISORS PERCEPTION ABOUT THE TRAINED AND UNTRAINED MALE AND FEMALE TEACHERS OF VARIOUS RANGES

Category of Teachers	Range of Opinion	Aspects of Opinion	Trained Teachers			Untrained Teachers			Critical ratio	Significance level
			N ₁	M ₁	S.D. ₁	N ₂	M ₂	S.D. ₂		
Trained and Un-trained Female Teachers	Bilaspur-Kota Range	Classroom Teaching	56	36.84	1.05	23	39.91	8.78	1.83	1.53 N.S.
		Co-curricular Activities	56	25.36	10.60	1.41	23	24.91	8.74	1.82 0.18 N.S.
Personal Qualities	56	29.04	5.98	0.80	23	27.78	6.12	1.28	0.84	N.S.
Trained and Un-trained Male Teachers	Bilaspur-Kota Range	Classroom Teaching	72	40.37	10.06	1.18	29	43.97	11.29	2.09 1.57 N.S.
		Co-curricular Activities	72	21.29	11.38	1.34	29	18.14	9.77	1.81 1.31 N.S.
Personal Qualities	72	32.49	5.40	0.64	29	33.90	7.06	1.31	1.08	N.S.
Trained and Un-trained Female Teachers	Udaipur-Kota Range	Classroom Teaching	61	42.44	8.70	1.11	36	35.22	8.11	1.35 4.05 S. (.01)
		Co-curricular Activities	61	15.77	10.55	1.35	36	13.53	7.55	1.26 1.12 N.S.
Personal Qualities	61	31.43	7.07	0.90	36	27.86	6.90	1.15	2.42	S. (.01)

The following inferences can be drawn from the above two tables:

(a) Jaipur-Ajmer Range:

- (i) Only two ratios regarding classroom teaching and organisation of co-curricular activities are significant in relation to opinion of supervisors about trained and untrained male teachers of the range (.05 level).
- (ii) Regarding personal qualities, the supervisors do not seem to discriminate between the two types of male teachers.
- (iii) In the case of female teachers, the supervisors held the view that the trained female teachers differ significantly (.05 level) from the untrained female teachers. In relation to the other two aspects of their perception, the supervisors are of the opinion that there does not seem to be any difference between the two category of teachers.

(b) Jodhpur-Bikaner Range

- (i) Regarding the male teachers, the supervisors hold the view that there is a significant difference (.01) between trained and untrained female teachers in relation to the organisation of co-curricular activities and im-

respect of personal qualities. There seems to be no difference between the classroom teaching of trained and untrained male teachers.

- (ii) In relation to female teachers, the supervisors are of the opinion that there is no significant difference between the trained and untrained female teachers of the range regarding the three basic aspects of their perception about them.

(c) Udaipur-Kota Range

- (i) The supervisors of this range do not perceive any difference between the behaviour of trained and untrained male teachers.
- (ii) Regarding female teachers, the supervisors are of the opinion that trained female teachers are definitely better than the untrained female teachers particularly in relation to personal qualities, and classroom teaching. In their opinion, the trained female teachers are as good as untrained teachers regarding the organisation of co-curricular activities.

CONCLUDING STATEMENT

In this chapter, it has been attempted to present a panorama of the supervisors' opinion about the overall role performance of trained and untrained teachers working in the schools of the field.

CHAPTER VII

SUMMARY AND CONCLUSIONS

'The actuarial nature of predictions in every area of human behaviour must be kept in mind when teacher assignment is considered'.

David G. Ryans

This piece of research purports to answer the basic question whether the preservice - training imparted to prospective teachers has a creative and constructive bearing in the field or not. The approaches to this problem could have been many but due to certain unavoidable difficulties such as, observing teachers behaviour before and after training, experimentation on the anonymous mass of human beings, departmental constraints and conditions, vast scatter of the universe of exploration etc., it was decided to restrict this exploration to the comparison of the class-room as well as school behaviour of trained and untrained male and female teachers of Rajasthan.

This fact which forms the fundamental basis of the entire exploration has been studied from different points of view and has been summarised under the following broad-heads:

- I. Objectives of the Investigation
- II. Construction of the Tools

- III. Size of the Sample
- IV. Comparison of the Class-room Behaviour
- V. Consolidated Conclusion

The major aspects of each of the above mentioned heads have been presented in the following paragraphs:

I. OBJECTIVES OF THE INVESTIGATION

The main objective of this investigation was to find out the relative effectiveness of the two-year teacher training programme at the elementary level in Rajasthan. However, in order to achieve this objective, some subsidiary and concomitant objectives were also set for achievement either as a by-product of the main objective or as a necessary condition for realising the main objective. The subsidiary and concomitant objectives are:-

1. To identify and analyse some of the prospective class-room behaviour patterns, various perspectives and perceptions, intellectual and emotional qualities of teachers on the basis of the opinion of the teacher-educators.
2. To study the class-room behaviour patterns of the trained and untrained male and female teachers working in the field of elementary education.

3. To know the supervisors' opinion about the class-room behaviour patterns of the trained and untrained teachers.
4. To evolve class-room profiles of the trained and the un-trained teachers in Rajasthan using the Flanders Interaction Analysis Category System technique of class-room interaction.
5. To compare the teaching aptitude of trained and un-trained male and female teachers of Rajasthan.
6. To compare the preparedness of male and female trained and untrained teachers in the subject-content, teaching elementary classes in the various parts of Rajasthan.
7. To compare the class-room interaction patterns of the trained and untrained teachers of the elementary schools.

II. CONSTRUCTION OF TOOLS

In all, four tools were prepared for this exploration. The tools are:

1. Blank for Ascertaining Weightage: After carrying out a critical study of the two-year STC syllabus, a Blank was prepared for ascertaining the opinion of teacher educators. The main objective of this tool was to

ascertain weightage about the role-performance of a teacher in relation to what the teacher has been taught in the SPV and to what extent he has been using the knowledge he has acquired in the field.

2. Questionnaire for Teachers: On the basis of the opinion of the teachers thus collected, a questionnaire-cum-attainment test was evolved consisting of items on the preparedness of the teachers and the application aspects of the training imparted to the teachers in their SPVs. The entire questionnaire having 50 items was divided into five major parts, namely, knowledge of the subject content in Mathematics, Hindi, Social Studies, General Science and others; application aspect of the subjects like Psychology, Methods of teaching, etc; Community life; 'Katipaya Vishishta Amubhav', and other aspects of training programme.

3. Observation Schedule

One observation schedule was prepared for observing the class-room teaching of trained and untrained male and female teachers. The schedule was structured to have eight sections; namely, Introduction of the lesson; Development of the lesson; Art of Questioning; Mastery over the Content; Use of teaching Aids; Personality of the teacher and environment of the class; Evaluation and Homework; and

Teacher-pupil interaction in the class-room. In all, 69 items were structured for the observation schedule. This tool was based on the Conventional method of observing lessons in schools.

4. Interview Schedule

In order to solicit opinions of the supervisors about the teachers working in schools, an Interview Schedule was prepared in advance. The basic objective of this schedule was to get definite opinions of the supervisors as to what they exactly felt about the trained as well as the untrained teachers teaching in their schools. This schedule was mainly divided into three major sections, namely, the teaching learning process; the personality traits; and other important activities of a school.

III. SIZE OF THE SAMPLE

The important points about the sample selected for this exploration are as follows:

1. Sample for Ascertaining Weightage: For the preparation of a questionnaire-cum-achievement test, a blank was prepared and submitted to 50 teachers working in 25 teachers training institutions (SPVs) of the State.
2. Sample for Evaluating Out Effectiveness: The sample for finding out effectiveness of the training programme

consisted of 550 teachers 363 trained and 187 untrained teachers working in various primary, upper primary, secondary and higher secondary schools of Rajasthan. The sex-wise split of the sample comprised 280 male and 270 female teachers.

IV. COMPARISON OF THE CLASS-ROOM BEHAVIOUR

In order to judge the effectiveness of the preservice teacher training programme, comparisons were made between the class-room behaviour of trained and untrained male and female teachers. The aspects of comparison included - preparedness of teachers; class-room behaviour of teachers by means of FIACS and traditional approach; Aptitude of teachers; and supervisors perception about the teachers performance in organising curricular as well as co-curricular activities in school situations. It was also attempted to test the homogeneity of the samples included in the sample. The findings in this context are as follows:

1. Performance on the Questionnaire-cum-test Paper

(a) Male Teachers

- (i) So far as the mastery over the content is concerned, the trained male-teachers have a clearcut edge over the untrained male-teachers in relation to their mastery over the subjects like, mathematics,

social studies and general science (.01 level).

- (ii) In the case of the Hindi subject, the difference between the performance of the two category of teachers is non-significant, yet the mean score of the trained male teachers is higher than the mean score of the untrained male teachers.
- (iii) In the case of the rest of the pursuits like the Community life and the application of knowledge, the difference between the means is non-significant. Nevertheless, the mean score of the trained male teachers is higher than the mean score of the untrained male teachers.

(b) Female Teachers

- (i) Out of nine, seven critical ratios (5 at .01 level and 2 at .05 level) are significant at either of the levels of significance. This means that trained female teachers are definitely superior to untrained female teachers.
- (ii) Only two ratios relating to mastery over Hindi language and the subjects other than the four basic ones, are non-significant, yet the mean score of the trained female teachers is higher than the score of the counterpart.

(c) Male and Female Teachers

In almost all the aspects of preparedness of teachers, the trained teachers had a definite superiority over the untrained teachers. Only in one case, i.e. mastery over the subjects other than basic four subjects, the critical ratio is found to be non-significant. However, the mean score of trained male and female teachers is higher than the mean score of untrained male and female teachers.

2. Comparison on the Scores on Teaching Aptitude Test

(a) Male Teachers

The trained male teachers do not seem to differ significantly from the untrained male teachers in relation to any of the aspects of teaching aptitude.

(b) Female teachers

- (i) The trained female teachers differ significantly from the untrained female teachers in relation to cooperativeness (.01 level) and moral character (.09 level).
- (ii) In relation to other aspects of teaching aptitude, the trained female teachers are as good as untrained female teachers.

(c) Male and Female Teachers

- (i) The trained male and female teachers differ significantly from untrained male and female teachers in respect of cooperative aptitude (.05 level) and moral character (.05 level).
- (ii) In relation to the rest of the constituents of teaching aptitude, such as, kindness, patience, wide interest, fairness, discipline, optimism, scholastic taste and enthusiasm there seems to be no significant difference between the aptitude of trained and untrained male and female teachers.

3. Class-room Behaviour of Teachers: FIACS Approach

- (a) On the basis of the FIACS technique, all the behavioural variables of the trained male and female teachers were found to differ significantly from the behavioural variables (Teacher Talk; Pupil Talk; Silence or Confusion; Teacher Response Ratio; Teacher Question Ratio; Instantaneous Teacher Response Ratio; Instantaneous Teacher Question Ratio; Pupil Initiation Ratio; Pupil Steady State Ratio; Content Cross Ratio and Steady State Ratio) of untrained male and female teachers.

- (b) There are six ratios viz., Teacher Talk (TT), Silence or Confusion (SC), Teacher Response Ratio

(TRR), Teacher Question Ratio (TQR), Instantaneous Teacher Question Ratio (TQR 89), Pupil Initiation Ratio (PIR), and Steady State Ratio (SSR) which are higher in magnitude in the case of trained teachers in comparison to the ratios obtained from untrained teachers. This further leads to the conclusion that:

- (i) the trained teachers talk slightly more in classroom in comparison to the untrained teachers.
- (ii) the silence or confusion is more in the classroom of trained teachers in comparison to the class of untrained teachers. This may be due to the fact that the untrained teachers, having 10 years experience, might have less authoritarian behaviour in comparison to the young trained teachers.
- (iii) The values of TRR, TQR and TQR 89 are much higher in comparison to the values obtained in the case of untrained teachers. This means that the questioning and the preparation of teacher response in the total of that part of the teacher behaviour which occurs immediately after the pupils have stopped talking etc., are definitely more in the case of trained teachers in comparison to the untrained teachers.

- (iv) Regarding pupil's talk, it is surprising to note that the value of PT (Pupil's talk) is more in the case of untrained teachers in comparison to the trained teachers. This finding is reverse in comparison to the finding worked out by Jangira (1975).
- (v) Similarly, the values related to TQR 89, P.S.S.R., C.C.R. are higher in the case of untrained teachers in comparison to trained teachers. This leads to the conclusion that the untrained teachers are more prone to purely content-oriented interaction in comparison to the trained teachers. The sustained pupils talk and the teachers response after pupils have stopped talking are also more in the case of untrained teachers than in comparison to the trained teachers.

4. Class-room Behaviour of Teachers: Traditional Assessment

(a) Male Teachers

- (i) The class-room behaviour of trained male teachers differs significantly from the class-room behaviour of untrained teachers particularly in relation to the introduction of lesson, the development of lesson, the techniques of questioning, use of teaching aids, personality and class-room climate classification, and the mastery over

(ii) So far as the evaluation of the lesson is concerned, the untrained male teachers appear to be at par with the untrained male teachers.

(b) Female Teachers

(i) The trained female teachers are superior to the untrained teachers in relation to introducing the lessons to pupils, developing the lesson in the class-room, using the teaching aids, and evaluating the lesson taught in the class-room.

(ii) No significant difference was found to have been noticed in relation to the class-room behaviour of trained and untrained female teachers regarding technique of questioning, mastery over the subject, personality and class-room climate and class-room interaction.

(c) Male and Female Teachers

From the point of view of all the aspects of class-room observation, the trained male and female teachers have established definite superiority over the untrained male and female teachers. Out of the eight critical ratios worked out in this context, four ratios relating to the introduction of lesson, the development of lesson, the use of teaching aids and the personality and class-room climate differed significantly at .01 level and the rest, relating to the technique of questioning, mastery over the content, evaluation of the lesson

and class-room interaction differed at the 0.05 level of significance.

5. Findings Relating to Perception of Supervisors

(a) Male Teachers

- (i) The trained male teachers have an edge over the untrained teachers in relation to personal qualities such as, discipline, punctuality, mental alertness, feeling responsibility organisation of co-curricular activities etc. The supervisors hold the opinion that the trained teachers are 99 per cent better than the untrained teachers.
- (ii) There is no significant difference between the trained and untrained teachers in relation to the aspects of observation like the class-room teaching and personal qualities of male teachers.

(b) Female Teachers

- (i) The trained female teachers have been considered superior to untrained female teachers in respect of class-room teaching and personal qualities (0.1 level).
- (ii) Regarding organisation of co-curricular activities, the supervisors regard both the category of teachers at par with each other.

(c) Male and Female Teachers

In the eyes of the supervisors, the trained male and female teachers have established their superiority

over the untrained male and female teachers in all the respects such as class-room teaching, organisation of co-curricular activities and personal qualities.

V. CONSOLIDATED CONCLUSION

On the basis of this piece of research, now it is an established conclusion that the pre-service teacher training programme has a definite bearing on the prospective teachers. Thus, the null hypothesis that there is no significant difference between the overall performance of the trained and untrained male and female teachers of the State of Rajasthan stands rejected. It has now, conclusively, been proved that the training given to the prospective teachers has a solid bearing on the recipients of the training.

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STATE INSTITUTE OF EDUCATION, RAJASTHAN, UDAIPUR

No.SIE-Ud/Gr.IA/GARP I/F.252/76

Dt. 2.2.76

Dear friends,

The State Institute of Education, Rajasthan, Udaipur has been working upon a Project entitled; 'Effectiveness of Pre-Service Teachers Training Programme at the Elementary Level in Rajasthan'. The basic objective of this investigation is to find out as to how far our pre-service training programme has been effective in inculcating abilities, interests, and attitudes necessary for the development of the personality of a teacher.

In our teacher training programme, as you already know, we teach Principles of Education, various Methods of Teaching, Educational Psychology, School-Organisation etc., and also help the trainees in acquiring mastery over the basic subjects taught in classes I to VIII. After completion of the training, the Department of Education in general and the teacher trainer in particular repose a confidence in the teacher and expect him to perform a number of things in the field. The main issue underlying this project is to find out as to how far this confidence is being sustained. Your opinion can be of much help to us in this respect.

We want to develop a questionnaire on the aspects of the role performance of a teacher particularly in relation to what he has been taught in the training and to what extent he has been practicing the knowledge in the field. Our main emphasis is to frame items of the questionnaire particularly on the application side of the training course.

For this purpose, we are attaching herewith a blank in which, inter alia, you are simply to express your opinion by way of giving weightage in percentage to each of the aspects of the role performance of teacher in the field.

We hope, in view of the importance of your opinion, you will try to be more careful and judicious in assigning proper weightage to the areas and sub-areas of the blank.

The information received by you will be kept strictly confidential.

Director
State Institute of Education,
Udaipur.

(Please Start filling in the blank right from here) 209

TEACHER EDUCATOR'S IDENTITY

1. Name _____
2. Designation _____
3. Training Institution _____
4. Place _____
5. District _____
6. No. of Yrs. in the
Training Institution _____
7. No. of Yrs. as a
Teacher Educator _____
8. Total Teaching
Experience _____
9. Subject(s) you teach in the Training Institution

(A) _____

(B) _____

(C) _____

(D) _____

Date

Signature

BLANK FOR ASCERTAINING WEIGHTAGE

Supposing you were to prepare a questionnaire for judging the actual performance of a teacher to whom you had taught and prepared for working in the field, and you were to prepare 100 items of the questionnaire, what otherwise weightage would you assign to the following aspects of the training programme ?

(N.B.: Please keep in mind that the total of the weightage for all the five major head columns is 100 and that the total of the distributed figures in column 2 against each major head correspond with the figure given in column 1.)

For Example:- Major Head 30 }

A	10
B	8
C	7
D	5

Total: 30 30

Sl.No.	Area	Weights' in percentage	
		Major Head	Minor Head
1.	<u>Application Aspect of Core Subjects</u>		x
	A- Principles of Education	x	
	B- Educational Psychology	x	
	C- Teaching Methods	x	
	D- School Organisation	x	
	Total		
2.	<u>Knowledge Aspect of the Subject Content</u>		x
	A- Hindi	(I-VIII)	x
	B- Mathematics	(I-VIII)	x
	C- Social Studies	(I-V)	x
	D- Gen. Science	(I-V)	x
	E- Drawing	(I-V)	x
	F- Optional Subject(s)	(VI-VIII)	x
	Total		

Sl. No.	Area	Weightage in percentage		
		Major Head	Minor Head	
3.	<u>Community Life</u>			x
	A- Hostel life	x		
	B- Social Service	x		
	C- Community Contact	x		
	D- Participation in Various Functions (Celebration of Festivals, Anniversaries, etc.)	x		
	Total			
4.	<u>Karigari Vishishta Anubhava</u>			x
	A- Efforts for Reducing Wastage	x		
	B- Preadmission- Registration	x		
	C- Enrolment Drives	x		
	D- Evaluation and Examination	x		
	E- Record - Keeping	x		
	F- Maintenance of Various Records etc.	x		
	G- Report writing	x		
	H- Surveys, case studies and Action Research	x		
	Total			
5.	<u>Other Aspects</u>			x
	A- Work Experience (Hobbies and Manual work, and Handling of tools)	x		
	B- Physical Education Programme (Games, Sports, Scouting, and Guiding and First Aid)	x		
	Total			
	TOTAL WEIGHTAGE:			

SUGGESTIONS FOR THE IMPROVEMENT OF THE EXISTING
ELEMENTARY TEACHER TRAINING PROGRAMME

N.B. Supposing you were given all the powers to improve upon the existing Pre-Service Teacher Programme, what suggestions would you like to make for its improvement. Please state your opinion below:-

1.

2.

3.

4.

5.

6.

7.

Signature

Date

राजस्थान के प्राथमिक शिक्षक पुश्टिकाण कार्यालय को पुभावशोलता का

अध्ययन

प्रश्नावली

(शिक्षाकौशिकी के लिए)

नोट: आपको हम प्रश्नावलों के सभी प्रश्नों के उत्तर निःसंकोच लिखने हैं। आप भारा लिखे गये उत्तर पूर्णतया गोपनीय रखे जायेंगे। हमका उपर्यौग केवल शोध-कार्य के लिये हो किया जायगा।

छठह क

१ - यदि आपको अपने वर्तमान विधालय की वार्षिक योजना बनानी हो तो प्राथमिकता क्रम से आप कौन-कौन से सोपान सामने रखेंगे ?

२ - जिओ अंडा में बालकों का १ से २४ तक क्रमांक है; दिये गये रेखा नियम में नियमित क्रमांक के बालकों को आप जहां बैठाना चाहेंगे, नमां पर उनका क्रम संख्या दाजिये -

(क) लम सुनने वाले बालक क्रमांक	१२
(ख) कमज़ोर इष्टि वाले	५, ७
(ग) नई कद वाले	१६, १८
(घ) नए झट वाले	८, १५
(ज) लहरियाँ	२, १४

३ - अधिकारी एकाई कदान में हिन्दो और गणित पढ़ाते समय नियमित बालकों के अलग-अलग समूह कैसे बनायेंगे? (कोष्ठक में दिये गये संकेतादार दाम में लें)

आप का नाम हिन्दो का गणित को समूह हिन्दो गणित इकाई का लें

राम (रा)	३	१	अ
भौहन (पौ)	४	८	
अतुल (अ)	१४	१५	ब
विवेक (वि)	१	२	
दिनेश (दि)	८	६	स
पहेला (प)	१३	१५	
सुरैश (सु)	२	३	द
प्रतिभा (प्र)	१४	१६	

५- आपने अपने विधालय में छात्र उपस्थिति पंजिका के मासिक गोशवारे ने बैल करना है। इसमें आप कौन-कौन से बिन्दुओं पर विशेष ध्यान देंगे ?

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६- आपको कदाच में एक मंदगति बालक है। उसको प्राप्ति के लिये आप कौन-कौन से बिन्दु ध्यान में रखेंगे ?

७- आपके जिला शिक्षा अधिकारी यह चाहते हैं कि कदाच ५ के बालकों को जु कल्पना शक्ति विकसित करने के प्रयत्न किये जावें। इस निमित्त आप कौन-कौन से कार्यक्रम रखना चाहेंगे ?

८- बौद्ध कदाच के छात्रों को गणित, हिन्दी, वित्रकला, कार्यानुभव विषयों ने आप किस क्रम में पढ़ाना चाहेंगे ?

१०३०८

विषय

१

२

३

४

९- सरल विधि से २५६ का वर्गमूल निकालना सिखाने के सौपान दीजिये -

१०- गमन अध्यात्मनिष्ठ गथ पाठ में प्रयुक्त निष्पाकित शब्दों को आप कैसे समझ रहे? ऐसल एक-एक विधि दीजिये।

(अ) विधालय -----

(ब) विद्वान -----

(ग) पौराणिक -----

(घ) सिणागार -----

११- अपने एकार्थ कदाच में छात्रों को आप दिशाओं का ज्ञान कराना चाहते हैं। इसके लिये कौनसों विधि प्रयुक्त करना चाहेंगे?

१२- आपको अपनी विधालय का नया भवन बनवाना है। इसके लिये स्थान निश्चित करते समय आप कौन-कौनसे बातें ध्यान में रखेंगे?

१३- आपका कदा के बार चालक छूत के रोग से पोड़ित है। आप यह नहीं कि यह रोग अन्य बालकों तक नहीं फैले, हस हेतु आप क्या क्यनस्था करेंगे ?

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- १-
- २-
- ३-
- ४-

१४- आपने अपने विधालय जा प्रधानाध्यापक बना दिया जाय तो अपकौट्टारा करवाये गये गृहकार्य के परिवोक्ताण में आप कौन से निदेश विन्दुध्यान में रखेंगे ?

लण्ठन

१५- "हूं" पुन्य लाकर निम्नांकित शब्दों के नये रूप लिखिये -

- (अ) उन - - - - -
- (ब) इन्हाँस - - - - -
- (स) कायात्म - - - - -
- (द) संसार - - - - -

१६- निम्नांकित समानार्थी शब्द लिखिये -

- (अ) ना देवर में विश्वास नहीं करता -----
- (ब) हाप में यात्रा करने वाला -----
- (स) जिसके समान कोई दूसरा न हो -----
- (द) जो कियं गये उपकार का अक्षान न माने -----

१७- निम्नांकित शब्दों के अर्थ बताईये -

- (अ) द्विप - - - - -
- (ब) द्रीप - - - - -
- (स) नोरज - - - - -
- (द) नारद - - - - -

१८- देश में घोड़ित जापातकालोन स्थिति पर १० पंक्तियों में अपने विवार लिखिये -

१६ - ग्रामको निष्पादित (रेखागणित का) आकृतियाँ बोर्ड पर बना कर दिखाना है। हनकारूपरेखा दिये गये नामों के नामे बनावये -
 समकोण न्यूनकोण त्रिभुज अधिककोण

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पंचभुज चूत वर्ग चतुर्भुज

२० - १२ का घडा ऊँक्ल मैं योग संक्रिया मैं $3 + 2 = 5$ होता है तो ६ और घडा मैं $3 + 2$ को योग संक्रिया को कैसे समझायेंगे, न्यूनतम पदों मैं लिखिये -

२१ - (१) नामे का जिस संस्था का $16\frac{2}{3}\%$ = १६५ है सामने के कोष्ठक () मैं संकेतादार कैवें -

(क) ५०० (ख) १००० (ग) २००० (घ) १६५० ()

(२) १०००१ एवं मूल ज्ञात करके लिखिये ()

२२ - निम्न दो अद्योग्यताओं का उल्लेख करिये, जिनके कारण किसी अद्योग्यता और नार निम कासदस्यता हेतु चुनाव लड़ने के अधिकार से बंचित नह दिया जाता है।

१-

२-

२३ - दूरायस्थान के रेखाचित्र मैं निष्पादित को

१- ताँबे को खाने

२- वासव छा

३- वन्धु नदी

४- राजस्थान की राजधानी



२४ - सौर परिवार के किन्हीं चार सदस्यों के नाम दो जिये -

१-

२-

३-

४-

२५ - सेतुलिङ्ग भौजन के गावङ्यका तत्त्व अंकित को जिये -

२५ - (१) निर्भावित को नापने का हकाहयों के नाम दीजिये - 217

ताप ----- लम्बाई -----

उष्णता ----- विद्युत -----

(२) निम्न धातु के दो उदाहरण दोजिये -

१ - २ -

२६ - निर्भावित को प्रदर्शित करने वाला साल रेखा चित्र बनाहये -

एलेट में रखा हुआ कप

खण्ड "ग"

२७ - यदि आपको कानाकास का धार्हन बना दिया जाय, तो आप निर्धार्थियों में सामुदायिक जीवन को विकसित करने की दृष्टि से कौन-कौनसा प्रवृत्तियां जारी करना चाहेंगे ?

२८ - यदि आपको कानाकास में चौरा हो जाने के समाचार मिले, तो आप क्या-क्या कार्यवाहो करेंगे ?

२९ - आपके विधालय चारा आपके ट्रैक्टर में कौन-कौनसी समाजसेवा के काम किये जा सकते हैं? कोई चार कार्य लिखिये -

३० - आपके बनने के पश्चात् पिछ्ले दो वर्षों में अन्पने जपने स्तर पर समाज-सेवा के जौ लायी किये हैं, उनका विवरण दोजिये -

३१ - जिस विधालय में आप कारी कर रहे हैं उसे क्रमौन्नत किया जाना है, परन्तु विधालय भवन अपर्याप्त है। इस समस्या को हल करने में आप क्या प्रयास करेंगे ?

३२ - आपको अपने विधालय में स्वतंत्रता दिवस का उत्सव पनाने का दायित्व सौंपा गया है। इसके लिये फंडारोहण के कार्यक्रम की रूप रैखा बाजिये -

३५- आपके विद्यालय काम के केन्द्राध्यक्षा ने हस वर्ष गांधोजय न्ती को 218 सामूहिक रूप से पनाने का निक्य किया है, जिसमें आपसे यह

पैदा का गहरा है कि आप एक आष्टप शिद्धार्थी की ओर से और दूसरा आष्टप बालकीं का ओर से देवें। उन आष्टप्स के नाम लिखिये

१- शिद्धार्थी की ओर से -----

२- बालकीं का ओर से -----

३५- आपके विद्यालय के कुल्लैक बालकीं ने सत्र के बोच में हो पढ़ाई छोड़ दी है, उन्हें पुनः विद्यालय में लाने के लिये आप क्या प्रयत्न करेंगे ?

३६- विद्यालय में प्रवेश पाने योग्य आयु के बालकीं की विद्यालय की ओर एवं एवं वहाने हेतु आपनी क्या प्रयास किया है ?

खण्ड ८

३७- आपको कहा गया कि क्रात्रीं का सामान्य विज्ञान विषय में सही प्रश्नोत्तर करना है। हस हेतु प्रश्न-पत्र तैयार करते समय आप किस-किस प्रकार के प्रश्न सम्पर्कित करना चाहते हैं ?

३८- आपको एसे प्राथमिक विद्यालय का प्रधानाध्यापक नियुक्त किया जायें और जहाँ के अभिभावक अपनो बालिकाओं को पढ़ने नहीं भेजते हैं तांग समस्या के हल के लिये आपका प्रयत्न करेंगे ?

३९- आपको अपने विद्यालय के अध्यापकों का "अध्यापक परिवय पत्र" तैयार करना है, हस प्रपत्र की पैशानों अंकित को जिये -

४०- आपको एक नये प्राथमिक विद्यालय का प्रधानाध्यापक नियुक्त किया जाता है उस विद्यालय में जाकर आप कौन-कौन से आवश्यक रैकार्ड रखना चाहेंगे ?

४१- आपके विद्यालय में कुछ क्रात्र लातार देरो से आ रहे हैं। हस समस्या के निराकरण के लिये कौनसी शैक्षणिक विधि काम में लाई जाए ?

४२- आपके गांव के ६ से १५ कालीं के कुछ बालक विद्यालय में शिद्धा प्राप्त करने वाली आ रही हैं। उनकी संख्या, आयु, लिंग, जाति आदि लक्षणों को जानकारी के लिये आप क्या करेंगे ?

४३- बालकों में श्रम के प्रति निष्ठा पैदा हो, इसके लिये आपके विद्यालय में कौनसा विषय पढ़ा रहे हैं ?

४४- उपर्युक्त प्रश्न में आप दारा उल्लिखित विषय के बन्तर्गत स्थानीय आवश्यकता के अनुसार निम्नलिखित कदाचित् के लिये आप कौनसी प्रवृत्ति प्राप्त करेंगे ?

१-

उपलब्ध साधन

प्रवृत्ति

२-

३-

४-

४५- आपके विद्यालय में कानूनिक टूटा हुआ है, इसकी परापूर्ति की दृष्टि से आप अपने विद्यालय में कौन से औजार एवं सामग्री की व्यवस्था करेंगे ?

४६- आप अपने कक्षा को हाइक समीप के दर्शनीय स्थान पर ले गये हैं। वहाँ एक छात्र के दीड़ते हुए गिर पड़ने से गहरी चौट आ गई है। आप तत्काल क्या उपचार करेंगे ?

४७- आप किसी ऐसे विद्यालय में स्थानान्तरित हुए हैं जहाँ अब तक परोपकार और समाज सेवा से सम्बद्ध कोई प्रवृत्ति नहीं चल रही है। आपके प्रधानाध्यापक कोई देरी प्रवृत्ति चलाना चाहते हैं जिससे बगलकों में परोपकार और समाज सेवा को भावना का विकास हो, आप अपने प्रधानाध्यापक जो को क्या सलाह कींगे ?

४८- आपको खेल के कालांश में कक्षा ४ और ५ के ४० छात्रों के लिये खेल की व्यवस्था लगानी है। इन सभी बालकों को व्यस्त रखने के लिये २ खेलों के नाम दीजिये ।

१-

२-

४९- निम्नांकित रिक्त स्थानों को पूर्ति कीजिये -

(क) कर्णाटक राज्य को राजधानी ----- है।

(ल) राजस्थान में जिलों को संख्या ----- है।

(ग) भारत में रासायनिक खाद का सब से बड़ा कारखाना ----- में है।

(घ) हमारे देश में परमाणु परीक्षण ----- नामक दैनंदिन में किया गया ।

या

हाइड्रोजन बमाने को प्रयोगशाला विधि का चित्र दीजिये तथा उपकरणों एवं रासायनिक पदार्थों के नाम और कित कीजिये -

या

कहा मैं शिद्धाण्ड करते हुए अध्यापक का चित्र बनाहूँगे

या

गमीं के मौसम मैं कच्चा मैं निसी बालक को नाक से खून घिरने पर आप क्या करेंगे ?

या

The policeman said, "I caught two thieves on Sunday." Tell your friend what the policeman said.

40 - निम्नलिखित में अपेक्षित सूचनायें भरिये -

(क) भारती राजिधान के लागू होने का दिनांक ----- है ।

(ख) ----- शहीद दिवस कहते हैं ।

(ग) राजस्थान के राज्यपाल ----- है ।

(घ) पृथक वंच व्यापोर्य दौजना प्रारम्भ होने का दिन ----- है ।

या

पुकाश के अपवर्तन के नियम लिखिये ।

या

च्यासे कौवे की कहानों - चित्र बनाहूँगे ।

या

चार सौ रुपये मासिक आद बालै रुक चार सदस्यों वाले परिवार का मासिक बजट दीजिये

या

Fill in the blank with appropriate form of the verb given in the brackets:-

- (a) I _____ (receive) his letter just now.
- (b) The peon _____ (ring) the bell before I reached the school,
- (c) He _____ (live) here for 10 years when I met him last month.
- (d) He always _____ (take) tea in the morning.

स्थान -----

हस्तीदार -----

दिनांक -----

पूरा नाम -----

पद -----

विधालय -----

TABLE NO. I
COMPARATIVE STUDY OF THE SCORES ON T.A.T. OF THE TRAINED AND UNTRAINED TEACHERS
OF JHUPUR-JUMER RANGE

Sl. No.	Aspects	Trained Teachers(106)			Untrained Teachers (61)			Criti- cal Ratio	Sig./ .Sig.	Level
		Mean M_1	S.D. σ_1	S.E. m_1	Mean M_2	S.D. σ_2	S.E. m_2			
1.	Cooperative	14.22	7.75	0.75	12.69	9.19	1.15	1.16	N.Sig.	-
2.	Aptitude	14.01	8.01	0.78	13.87	8.54	1.07	0.10	N.Sig.	-
3.	Kindness	3.01	12.44	1.21	0.62	12.41	1.55	1.21	N.Sig.	-
4.	Patience	24.74	7.59	0.74	23.45	10.37	1.30	0.93	N.Sig.	-
5.	Wide Interests	27.36	9.98	0.97	27.45	7.68	0.96	0.06	N.Sig.	-
6.	Fairness	17.29	8.30	0.81	18.36	6.89	0.86	0.86	N.Sig.	-
7.	Moral Character	13.16	7.99	0.78	11.33	7.99	0.99	1.44	N.Sig.	-
8.	Discipline	14.68	9.36	0.91	15.91	8.85	1.11	0.84	N.Sig.	-
9.	Optimism	12.29	7.49	0.73	12.98	8.27	1.03	0.56	N.Sig.	-
10.	Scholastic Taste	24.39	9.19	0.89	23.55	9.56	1.19	0.57	N.Sig.	-

TABLE NO. II

COMPARATIVE STUDY OF THE SCORES ON T. A. S. OF THE TRAINED AND UNTRAINED TEACHERS

OF JODHPUR-BIKNER
RANGE

Sl. No.	Aptitude	Trained Teachers(124)			Untrained Teachers(52)			Critical Ratio	Sig. / N.Sig.	Level
		Mean M ₁	S.D. σ_1	S.E. m ₁	Mean M ₂	S.D. σ_2	S.E.m ₂			
1.	Co-operative Aptitude	15.42	8.15	0.73	14.09	8.50	1.12	1.01	N.Sig.	-
2.	Kindness	16.09	8.39	0.75	15.78	8.28	1.09	0.23	N.Sig.	-
3.	Patience	1.14	12.37	1.11	1.78	13.01	1.71	0.32	N.Sig.	-
4.	Wide Interests	25.81	11.85	1.06	22.86	9.50	1.25	1.66	N.Sig.	-
5.	Fairness	27.40	10.27	0.92	28.07	9.08	1.19	0.42	N.Sig.	-
6.	Moral character	13.02	13.91	1.25	16.84	9.49	1.25	1.89	J.Sig.	-
7.	Discipline	10.64	11.39	1.02	13.90	8.96	1.18	1.92	N.Sig.	-
8.	Optimism	11.07	14.38	1.29	11.79	11.64	1.53	0.33	N.Sig.	-
9.	Scholastic Taste	9.01	11.33	1.02	10.88	8.81	1.16	1.11	N.Sig.	-
10.	Enthusiasm	18.96	16.61	1.49	20.28	12.30	1.62	0.54	N.Sig.	-

TABLE NO. III

COMPARATIVE STUDY OF THE SCORES ON T.A.T. OF THE TRAINED AND UNTRAINED TEACHERS OF
UDDEHUKOTI, RANGA

Sl. No.	Aspects of Aptitude	Trained Teachers(133)			Untrained Teachers(65)			Criti- cal Ratio	Sig./ N.Sig.	Level
		Mean M_1	S.D. σ_1	S.E.m ₁	Mean M_2	S.D. σ_2	S.E.m ₂			
1.	Co-operative Aptitude	14.39	8.17	0.71	12.83	8.18	1.01	1.26	N.Sig	-
2.	Kindness	15.67	8.39	0.73	16.38	6.36	0.79	0.61	N.Sig.	-
3.	Patience	1.64	12.23	1.06	2.83	13.24	1.64	0.63	N.Sig.	-
4.	Wide Interests	25.71	9.59	0.83	26.57	8.29	1.03	0.62	N.Sig.	-
5.	Fairness	28.68	7.95	0.69	30.26	8.03	0.99	1.31	N.Sig.	-
6.	Moral Character	18.04	7.90	0.68	19.72	7.21	0.89	1.44	N.Sig.	-
7.	Discipline	12.57	7.71	0.67	12.06	7.76	0.96	0.44	N.Sig.	-
8.	Optimism	16.56	9.79	0.85	18.20	9.45	1.17	1.12	N.Sig.	-
9.	Scholastic Taste	13.57	8.45	0.73	14.61	7.27	0.90	0.85	N.Sig.	-
10.	Enthusiasm	25.22	10.49	0.99	25.92	9.65	1.20	0.46	N.Sig.	-

अवलोकन - प्रपत्र

OBSERVATION SCHEDULE

राजस्थान राज्य शिक्षा संस्थान
उदयपुर

प्रतिक्रियात्मक विवरण

(क) प्रैदाणीय शिक्षक परिचय

१- नाम -----	आयु -----		
२- शिक्षणीय योग्यता -----			
३- प्रशिक्षण विधालय का नाम (जहाँ से प्रशिक्षण प्राप्त किया)			
४- प्रशिक्षण परोक्षा उचार्ष करने का वर्जा -----			
५- प्रशिक्षण परिणाम :			
सेहान्त्रिक परोक्षा ---	प्राथमिक परीक्षा		
ब्रेणी -----			
६- अध्यायन अनुभव - वर्जा --- पाह ----- दिन -----			
७- विधालय का नाम जहाँ कार्यरत है -----			
८- नियुक्ति तिथि -----			
९- विषय जो पढ़ा रहे हैं -----			
१०- प्रशिक्षण से पूर्व शिक्षण अनुभव			
क्रम	कक्षा	विषय	अवधि

(ख) अवलोकनकर्ता

नाम -----	योग्यता -----	अनुभव -----
पद -----		स्थान -----
अवलोकन तिथि -----		

(ग) कक्षा कार्य जिसका अवलोकन किया जा रहा है -

कक्षा	विषय	कालांश
-------	------	--------

पाठ प्रस्तावना

१- पाठ की प्रस्तावना स्पष्ट है

पूर्णतः अंशतः कर्तव्य नहीं

२- पाठ का प्रस्तावना काव्य को
अभिप्रेरित करने में समर्थ रही है।

पूर्णतः अंशतः कर्तव्य नहीं

पाग (ख)

पाठ का विकास

१- अध्यापक ने विषायवस्तु किस
विधि से प्राप्त की है।

१- व्याख्यान विधि

पूर्णतः अंशतः कर्तव्य नहीं

२- प्रश्न - उत्तर विधि

पूर्णतः अंशतः कर्तव्य नहीं

३- प्रयोग विधि

पूर्णतः अंशतः कर्तव्य नहीं

२- अध्यापक ने शिक्षाणा विधियों को
प्रयुक्त करते समय अपेक्षित सोचानों
का ध्यान रखा है।

पूर्णतः अंशतः कर्तव्य नहीं

३- विषायवस्तु पाठ्यक्रम के अनुसार है?

स्तर से ऊपर स्तरानुकूल

स्तर से नीचे

४- काव्यों ने पाठ में रुचि ली है

पूर्णतः अंशतः कर्तव्य नहीं

५- काव्यों द्वारा ग्रहण को गई
विषायवस्तु की अध्यापक ने बीच
बीच में जाँच का है ?

पूर्णतः अंशतः कर्तव्य नहीं

पाग (ग)

प्रश्न

१- पाठ की काव्यों के साह्योनि से
बढ़ाया जा रहा है ?

पूर्णतः अंशतः कर्तव्य नहीं

२- प्रश्न उद्देश्यपूर्ण है ?

पूर्णतः अंशतः कर्तव्य नहीं

३- प्रश्न विषायवस्तु को स्पष्ट करते हैं।

पूर्णतः अंशतः कर्तव्य नहीं

४- प्रश्नों के सहा उत्तरों को स्वीकार किया जा रहा है ?

५- आवश्यकतानुसार सही उत्तर निकलनाने का प्रयास किया गया है ?

६- अध्यापक ने गलत उत्तरों की अवहेलना को है ?

७- कात्रों द्वारा गलत उत्तर दिये जाने पर अध्यापक ने स्वर्य सहो उत्तर बताये हैं ?

शिक्षाक का विषयवस्तु पर अधिकार

१- अध्यापक का विषयवस्तु पर अधिकार है

२- अध्यापक विषयवस्तु को स्पष्ट रूप से समझा रहा है ?

३- अध्यापक शिक्षण के समय क्षात्रों द्वारा पूँछे गये प्रश्नों का उत्तर भली प्रकार दे रहा है ?

४- अध्यापक कठिन शब्दों सपुत्र्यों के अर्थ को विमिन्न तरोंकों से बता रहा है ?

५- अध्यापक प्रकरण संबंधित पाठ्य- पुस्तकेतर ज्ञान क्षात्रों को दे रहा है।

६- अध्यापक केवल पुस्तक को रटे रटाये ढांग से तो नहीं पढ़ा रहा है?

शिक्षण सहायक सामग्री को उपलब्ध

७- अध्यापक ने इयामपट का प्रयोग किया है ?

पूर्णतः अंशतः कर्तव्य नहीं 228

पूर्णतः अंशतः कर्तव्य नहीं

पूर्णतः अंशतः कर्तव्य नहीं

पूर्णतः अंशतः कर्तव्य नहीं ।

पूर्णतः अंशतः कर्तव्य नहीं ।

पूर्णतः अंशतः कर्तव्य नहीं

२- यदि स्थामपट का प्रयोग किया है
तो पाठ के पुर्संग को देखते हुए
निष्पांकित को क्या स्थिति रही?

- (क) अक्षार का आकार
- (ख) लैल
- (ग) वर्तीनी
- (घ) रैखाचित्रों का आवश्यकतानुसार
प्रयोग
- (ঙ) लैखन गति
- (চ) स्थामपट सार

३- शिक्षण सामग्री का आकार
कलाकार के छात्रों का स्तरानुरूप है?

४- शिक्षण सामग्री के प्रयोग का
अम ठोक है।

५- शिक्षण सामग्री छात्रों को
उत्प्रेरित कर रही है ?

६- शिक्षण सामग्री विज्ञायवस्तु से
सोधा सम्भवित है?

७- शिक्षण सामग्री को संख्या का
विज्ञायवस्तु का दृष्टि से
जीवित्य है ?

८- शिक्षाक ने आवश्यकतानुसार उपयुक्त
शिक्षण सामग्री का अध्यापन में
प्रयोग किया है ?

- १- चाटी
- २- माडल
- ३- मानचित्र
- ४- चित्र
- ५- प्रत्यक्षा (वस्तु दिखाकर)

पूछौल ठोक ठोक अत्यधिक छोटे
सुस्पष्ट साधारण अस्पष्ट
पूर्णतः अंशतः कर्ताही नहीं

पूर्णतः अंशतः कर्ताही नहीं
तो त्रु त्रु साधारण अत्यन्त मंद
पूर्णी वाक्यों में सांकेतिक
शब्दों में कर्ताही नहीं

पूर्णतः अंशतः कर्ताही नहीं

६ - शिक्षाक ने छात्रों द्वारा अध्यास पुस्तिका में उतारे गये इयामपट् पार का अवलोकन किया है ?

पूर्णतः अंशतः कर्तव्य नहीं

पाण (ब)

शिक्षाक का व्यक्तित्व एवं कदाच का वातावरण

१ - शिक्षाक का व्यक्तित्व

(क) विद्यास के साथ पढ़ाना

पूर्णतः अंशतः कर्तव्य नहीं

(ब) हक्कलाहटा कांपना। हक्कलाहट एवं कांपना

पूर्णतः अंशतः कर्तव्य नहीं

(ग) स्वयं का स्वस्थता एवं स्वच्छता

पूर्णतः अंशतः कर्तव्य नहीं

२ - बालकों के प्रति व्यवहार

स्वैहपूर्ण साधारण रूपा

३ - अध्यापक ने कदाच के निर्जार्तिक वगाई के विशिष्ट बालकों पर विधिवत् स्थान दिया है ।

१ - तोवै गति वाले छात्र

पूर्णतः अंशतः कर्तव्य नहीं

२ - मंद गति वाले छात्र

पूर्णतः अंशतः कर्तव्य नहीं

३ - उद्ददण्ड छात्र

पूर्णतः अंशतः कर्तव्य नहीं

४ - अध्यापक शिक्षण कार्य प्रसान्नता-

पूर्वीक कर रहा है ।

मूल्यांकन एवं गृहकार्य

१- अध्यापक पढ़ायी गई विषयवस्तु का मूल्यांकन करता है ?

पूर्णतः अंशतः कर्तव्य नहीं

२- कमजौर क्लासों को सरल कार्य देता है ?

पूर्णतः अंशतः कर्तव्य नहीं

३- अध्यापक पढ़ाई गई विषयवस्तु पर पुस्तिदिन गृहकार्य देता है ?

पूर्णतः अंशतः कर्तव्य नहीं

४- गृहकार्य स्तरानुसार होता है ?

पूर्णतः अंशतः कर्तव्य नहीं

५- दिये गये गृहकार्य को जाँच गया है?

पूर्णतः अंशतः कर्तव्य नहीं

६- गृह कार्य का संशोधन विधिवत् किया जाता है ?

पूर्णतः अंशतः कर्तव्य नहीं

७- गृहकार्य न करके लाने वाले क्लासों से गृहकार्य करवाने का प्रयास किया जाता है ?

पूर्णतः अंशतः कर्तव्य नहीं

८- अध्यापक संशोधित गृहकार्य का अनुबंधन (Follow-up) करता है

पूर्णतः अंशतः कर्तव्य नहीं

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पठन-पाठन में क्लास - शिक्षाक पारस्परिक क्रिया

१- अध्यापक क्लासों को भावनाओं का आदर करता है ।

पूर्णतः अंशतः कर्तव्य नहीं

२- अध्यापक क्लासों को प्रशंसा करके उन्हें प्रौत्साहित करता है ।

पूर्णतः अंशतः कर्तव्य नहीं

३- अध्यापक क्लासों के विचारों एवं सुझावों को यथाचित् महत्व देता है ।

पूर्णतः अंशतः कर्तव्य नहीं

४- अध्यापक विषयवस्तु को विधिपूर्वक स्पष्ट कर रहा है ।

पूर्णतः अंशतः कर्तव्य नहीं

५- अध्यापक विषय वस्तु ही संबंधित
ऐसे प्रश्न पूछता है जिनका छात्र
उत्तर दे सकते हैं ?

पूण्ठीतः औशतः कर्तव्य नहीं

६- अध्यापक ऐसे निर्देश एवं आदेश देता
हैं जिनका छात्र पालन कर रहे हैं ?

पूण्ठीतः औशतः कर्तव्य नहीं

७- अध्यापक ऐसो स्थिति प्रस्तुत कर
रहा है जिससे छात्र स्वयं अपनी
त्रुटि को स्वोक्तार कर रहे हैं ?

पूण्ठीतः औशतः कर्तव्य नहीं

८- अध्यापक वातलिय के द्वारा
विद्यार्थीयों के सुफाव प्राप्त कर
रहा है।

पूण्ठीतः औशतः कर्तव्य नहीं

९- अध्यापक छात्रों को प्रश्न पूछने
के लिये प्रौत्साहित कर रहा है।

पूण्ठीतः औशतः कर्तव्य नहीं

१०-अध्यापक के शिदाण्ड कालांश में
छात्र अनुशासन में रहे हैं ?

पूण्ठीतः औशतः कर्तव्य नहीं

सादात्कार अनुसूची

(परिवोद्धाकों के लिये)

भाग - कपरिवयात्मक - विवरण

(ज) परिवोद्धाक :

नाम	पद
पता	
योग्यता	
नियुक्ति दिनांक	
कुल अनुभव	
(क) अध्यापन कार्य	
(ख) परिवोद्धाक के रूप में	

(ख) सादात्कार कर्ता :

नाम	पद
पता	
योग्यता	
कुल अनुभव	

(ग) अध्यापक जिनके सम्बन्ध में सादात्कार किया जा रहा है :

नाम	
योग्यता :	

- (१) शिक्षाधिक - - - - -
(२) व्यावसायिक - - - - -

भाग - खसामान्य सवार्य

१- आप अध्यापकों के कदा - शिक्षण का अवलोकन एक सत्र में कितनी बार करते हैं ? - - - - -

२- कदा शिक्षण - अवलोकन में आप प्रमुखतया किन-जिन बिन्दुओं को ध्यान में रखते हैं ? - - - - -

- ३- कहा शिद्धाण्ड में पाहै गहै कमियों को
दूर करने के लिये आप क्या करते हैं ?
- ४- अध्यापक ने आपके द्वारा बतायी गहै
कमियों को दूर किया है इसके लिए
आप क्या करते हैं ?
- ५- कहा अवलोकन के समय क्या आप
शिद्धांक की दैनिक पाठ योजना का
अवलोकन करते हैं ?
- ६- दैनिक पाठ योजना को उपादेय सर्व
अवहारिक बनाने के लिये आप किन
बिन्दुओं पर अधिक जोर देते हैं ?
- ७- शिद्धांक उपने अध्यापन में सहायक
सामग्री का उपयोग करें इस हेतु आप
क्या व्यवस्था करते हैं ?
- ८- पर्तिविद्याण में आप क्या कठिनाइयाँ
अनुभव करते हैं ?

भाग - १

कहा शिद्धाण्ड सम्बन्धी स्थिति

- १- आपने अधिनस्थ कार्यरत अध्यापक
का
विषयवस्तु पर कैसा अधिकार है ?
- १- पाण्डा
 - २- गणित
 - ३- विज्ञान
 - ४- सामाजिक

- २- दैनन्दिनी की पूर्ति को दृष्टि से
आपने हन्हें कैसा पाया है ?
- ३- पाठ को तैयारो का दृष्टि से
आप हन्हें कैसा मानते हैं ?
- ४- सहायक सामग्री को जुटाने में ये
कैसे रहे ?

- ५ - सहायक सामग्रीं का कदा शिक्षण
में वथोचित उपयोग को दृष्टि से आप
हन्हें कैसा पानते हैं ?
- ६ - अपाप पट्ट कार्य में गाप हन्हें कैसा
राखते हैं ?
- ७ - कदानशासन बनाये रखने में आपने
हन्हें कैसा पाया है ?
- ८ - शिक्षण का नवोन विध्याँ को
संचाकार करने में आप हन्हें कैसा
सौचते हैं ?
- ९ - विज्ञाय-वस्तु अथवा शिक्षण विधि में
संलग्न होने का स्थिति में यह अपने
साध्याँ से सलाह लेने में आपने हन्हें
कैसा पाया है ?
- १० - कान्त्रों से गुह कार्य करवाने और उसका
संशोधन करने की दृष्टि से आपने हन्हें
कैसा पाया है ?

भाग - ४

अन्य कान्त्रों में क्षिप्रशोलता

- १ - शिक्षण के अतिरिक्त हन्हें और
कौन से दायित्व सौंपे गये हैं ?
(खेल, पराइा व्यवस्था, पुस्तकालय १
व्यवस्था, कार्यानुभव, स्काउटिंग, २
प्राधीना सभा, कान्त्र संसद, कायलिंग ३
कायफ़िदि) ४

- २ - हन दायित्वों के संपादन में आपने
हन्हें कैसा पाया है ? १ २ ३ ४

- ३- हनसै सम्बन्धित अभिलेख कान्त्र
उपस्थिति पंजिका, कान्त्र प्रगति
अभिलेख, कान्त्र प्रातिपत्र आदि की
पूर्ति में ये कैसे हैं ?
- ४- विसा कार्यक्रम उत्सव आदि के
संबंधित का दामता को दृष्टि से
आपने हन्हें कैसा पाया है ?
(वार्षिक उत्सव, टूर प्रैन्ट आदि)

प्राग्-हं

वैनांशिक गुण

- १- समय पालन काढ़िट से आपने हन्हें
कैसा पाना ?
- २- हन्हों साथी गये कार्य को ठीक समय
पर जिम्मेदारा के साथ पूरा कर
लेने में ये कैसे हैं ?
- ३- अपने अधिकारियों के साथ हनका
व्यवहार कैसा है ?
- ४- अपने साथियों के साथ हनका
व्यवहार कैसा है ?
- ५- अपने विधायियों के साथ हनका
व्यवहार कैसा है ?
- ६- कान्त्रों के अभिभावकों और
विधालय से बाहर के लोगों के
साथ हनका व्यवहार कैसा है ?
- ७- शिक्षापाद व्यवसाय के प्रति हनका
निष्ठापाद कैसा है ?
- ८- सामान्य अध्ययन एवं विद्या की दृष्टि
से आप हन्हें कैसा पानते हैं ?
- ९- मानसिक जागरूकता को दृष्टि से
आपने हन्हें कैसा पाया है ?

१० - हनके क्राकितत्व कीअन्य कौन
सो विशेषताएँ हैं जैसे आप
प्रभावित हुए हैं ?

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प्राग् - च

अन्य सूचनाएँ

आपने हमें विद्यालय कौन कीन से कार्यों में
उपयुक्त महोंपाया ?

द्वात्र	कार्य
शिद्वाक	-----
सहशिद्वाक	-----
कार्यलियिक कार्य	-----
अन्य	-----

२ - आपको संभवतः प्रशिद्वित (एस०टी०सी०)

एवं अप्रशिद्वित दोनोंप्रकार के अध्यापकों
के साथ कार्य करने का अवसर मिला होगा
आपने अनुभव जैसा आधारपर प्रशिद्वित और
अप्रशिद्वित अध्यापकोंके बीच आपने क्या
अंतर पाया ?

३ - आप का इष्टि में धर्मीयन (एस०टी०सी०)
शिद्वाक प्रशिद्वाण कार्यमें और कौन
कौन सो बातें सम्प्लिं कर लों जार्ये ताकि
प्रशिद्वाण प्राप्त करके अध्यापक और
अधिक अच्छों तरह से कर्ये कर सकें ?

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